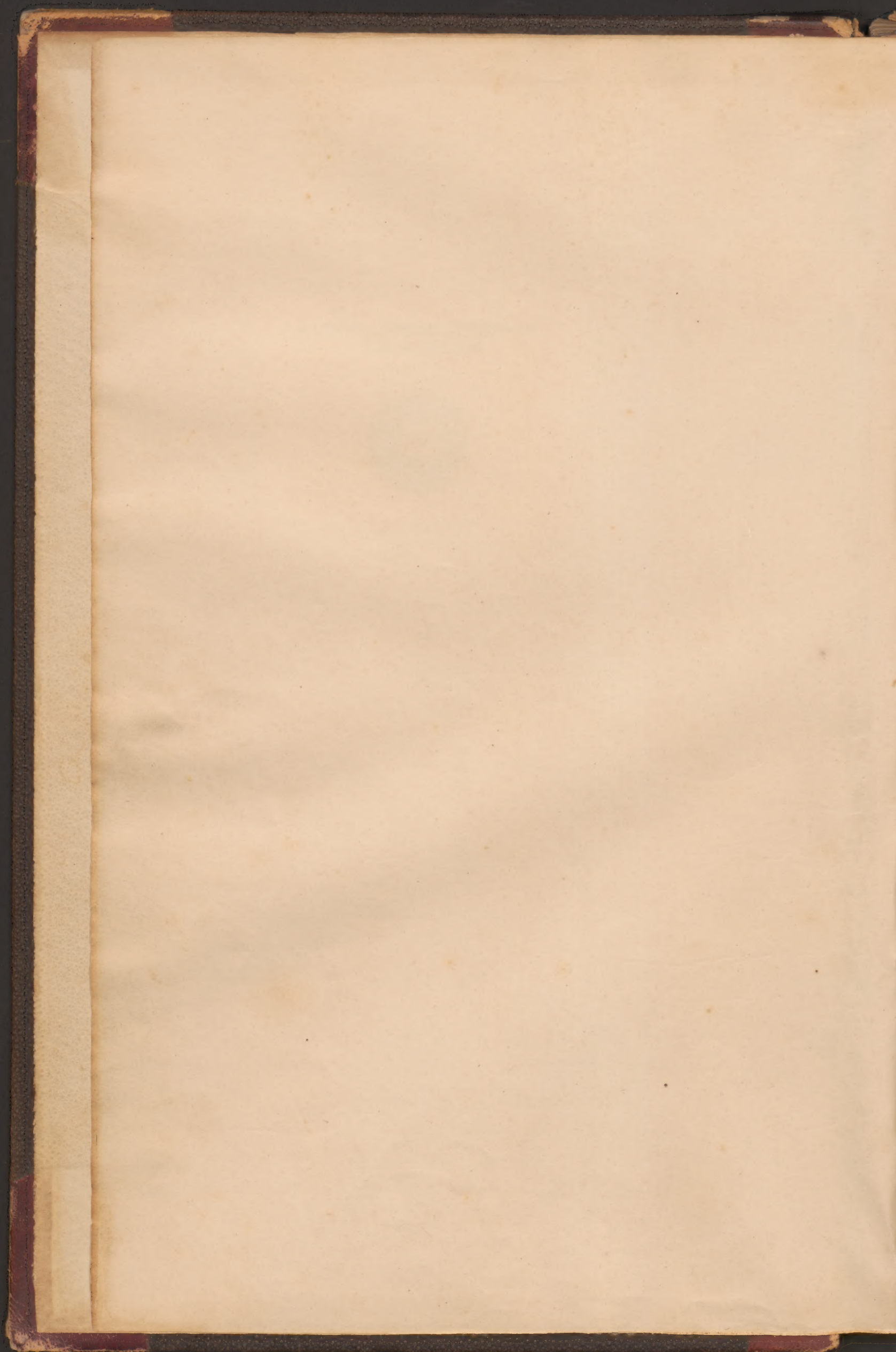


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MEDICINE —

Lecture notes from
Howard University



Notes of Lectures
on
"The Practice of Medicine,"

Delivered by T.B. Hood, M.D.

Professor of Practice of Medicine, Howard University,
Washington, D.C.

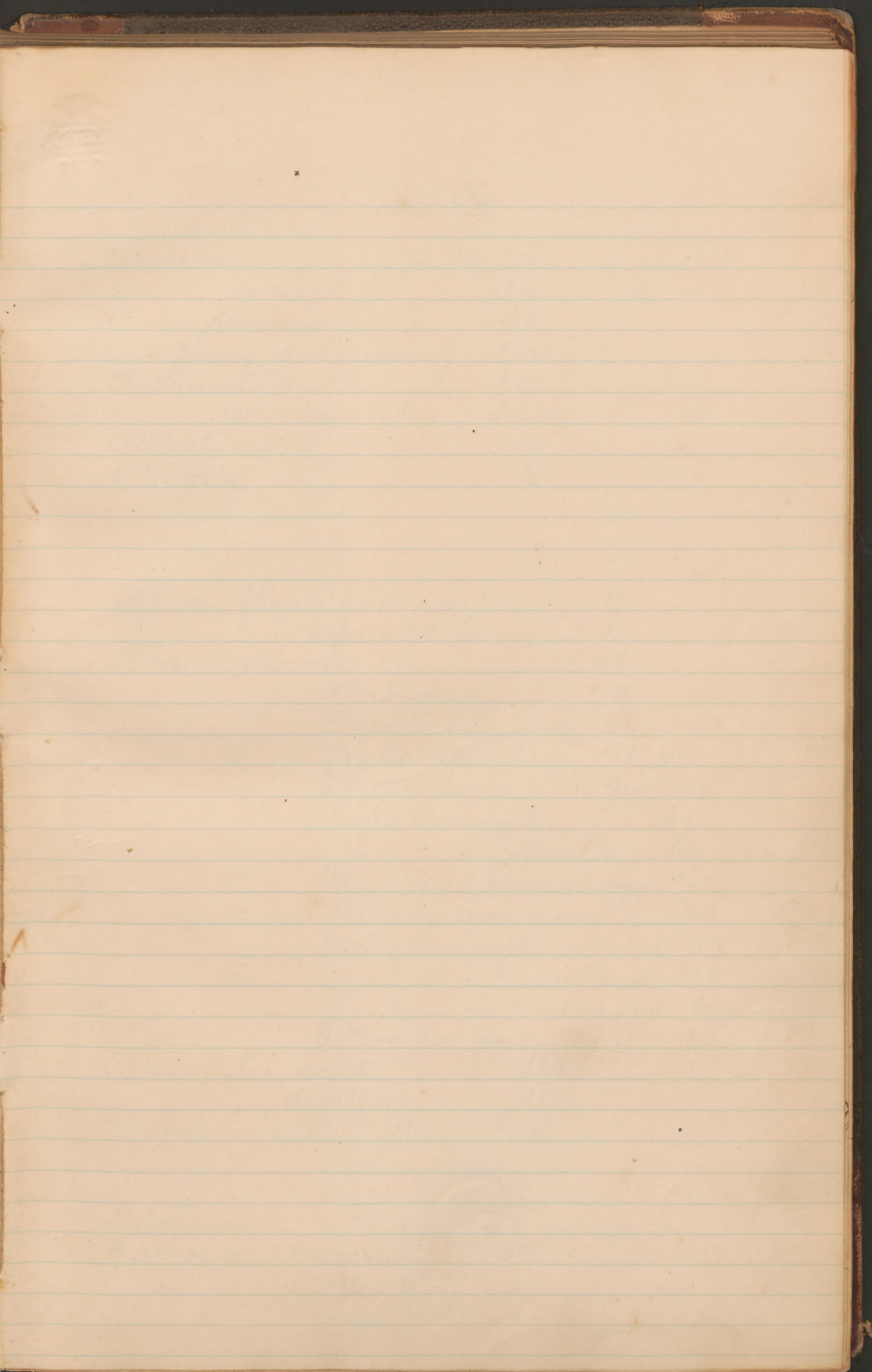
Notes of Lectures

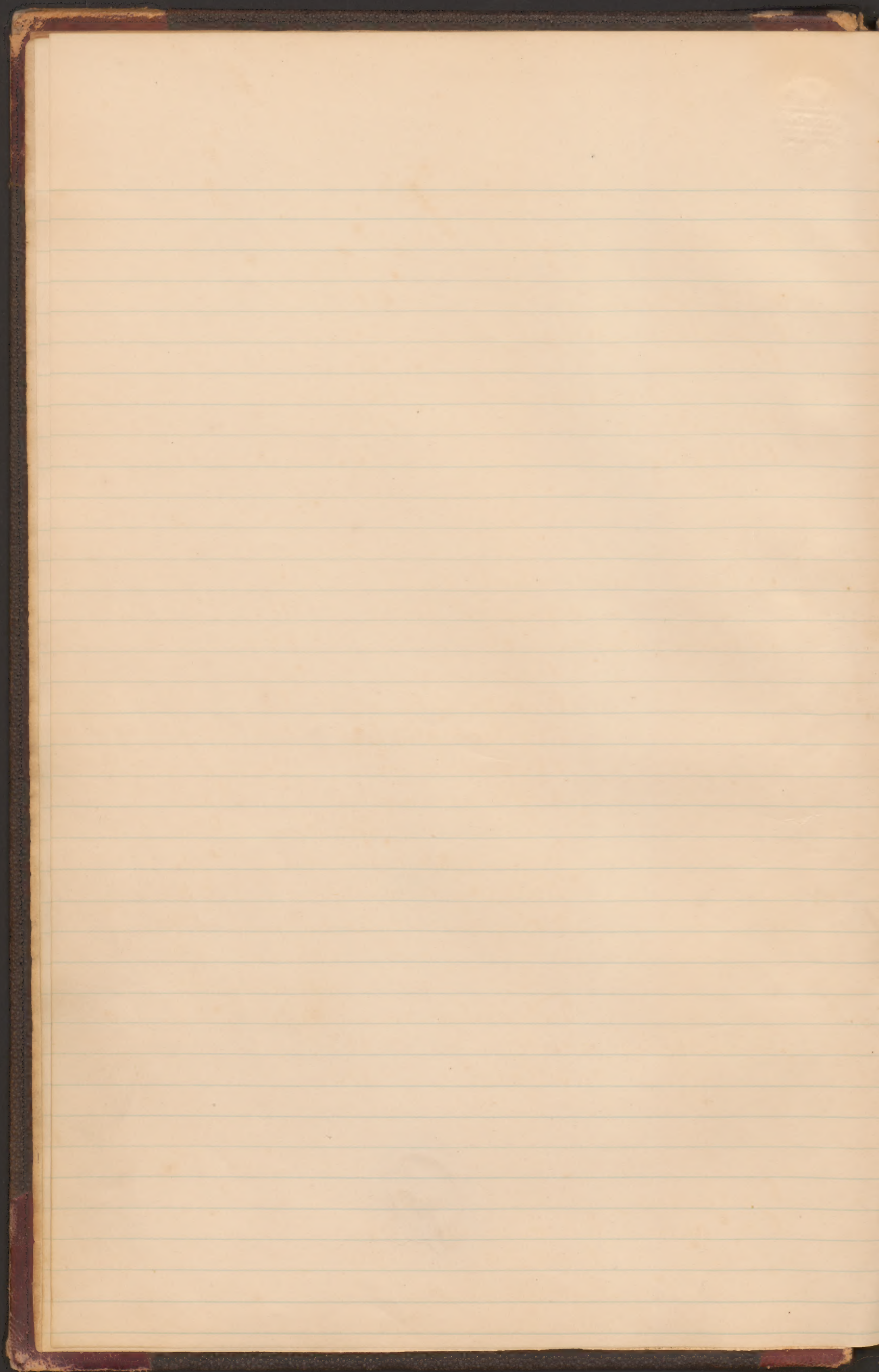
"The Practice of Medicine"

delivered by Dr. J. H. Stoddard

Professor of Medicine, Harvard Medical School
Boston, Mass.

NLM





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Practice of Medicine.

D^r Hoar.

Principles of medicine are those great truths about which the mass of the profession agree, which underlie the practice of medicine.

Pathology is the physiology the science of disease.

What is health & what disease? Disease is the deviation from health. Disease & health are relative terms. The processes in disease are different from those in health, yet not essentially distinct or separate from them.

Pathology the study of living bodies in conditions unlike those of ordinary life.

Diseases Functional - Structural.

Certain conditions common to a great many diseases = general pathology. Take anaemia which runs thro' nearly all conditions. That group of phenomena called Fever is found in connection with a large percentage of diseases, therefore the subject of fever comes within the subject of general pathology.

All fevers are Idiopathic or Symptomatic.

Idiopathic fever is due to some change in the blood or in the general condition of the body, which is manifested by the phenomena of fever. Smallpox. (Example.)

Symptomatic fever is symptomatic of some lesion of the body - Broken leg. (Example.)

Factors of fever or essential phenomena of fever.

1. Increase or preternatural temperature.
2. " consumption of water.
3. " action of heart.
4. Increase of urea in urine (not always present but generally which means destruction of nitrogenous tissue. Sometimes there is a decrease of urea).

These belong to both kinds of fevers.

Anaemia & fever are common to many diseased conditions. There are other conditions that go to make up the bulk of general pathology.

Special Pathology relates to Cause, Origin, Progress &

Termination of Specific Diseases.

General Pathology relates to Origin, Cause, Methods of Progress & Termination in diseased conditions or those things which diseases tissues generally.

All the changes which solids of body undergo in disease may be put into five groups.

1. Changes in bulk.
2. " " form.
3. " " structure.
4. " " site.
5. " " consistence.

Changes in bulk. Increase of bulk - hypertrophy. No of the profession use hypertrophied to mean enlarged. It really means overfed. Any organ or tissue of the body which gets for any reason an increased quantity of nutrition without any increase of waste must be hypertrophied. The best specimens are seen in the muscular system, (Blacksmith's right arm.) When any organ is called upon to do increased work, it will get larger. There is a diseased heart so far as increased weight & bulk go, which is not a diseased heart, for the heart got bigger because it wanted to.

Increased use demands increased nutrition which means increased size. One kidney often performs the work of two & increases in size.

Hypertrophied heart: there is a disease of the valves at the aortic opening. Rheumatism often jumps from joints to heart. Hypertrophied heart is diseased in one sense. So also lungs & liver.

In most organs, particularly glandular organs, hypertrophy occurs in two ways:-

1 Cells increased in size - simple hypertrophy.

1 " " " " number - numerical " "

Then there is a spurious hypertrophy. All cells are connected by intercellular substance. It is possible that that connective tissue shall be so increased as

to its quantity as to increase the size of the organ involved. The organ is enlarged but not hypertrophied in any proper sense because the cells are not increased.

Take case of increased size & density of bone. In case of bone cut away in tibia, & ^{in part} fibula, the cell itself undergoes change so far as the Physiological law goes, when increased work is demanded, increased nutrition is necessary & as a result hypertrophy. (The hypertrophied organ is

sometimes the cause & sometimes the result of disease.

The spleen becomes larger in connection with the progress of chronic malarial poison; Spleen one of the safety valves of the portal circulation. (East India Liver).

Best specimen of Physiological hypertrophy in muscular tissues, & of diseased hypertrophy in glandular structures.

Sometimes hypertrophy causes disease — Goitre, hypertrophy of thyroid gland, seen in certain climates. Alps, in valleys between mountains, When throat becomes very large by virtue of its weight it interferes with respiration, & when very marked it brings on disease of the air cells themselves, & if they die it is caused by disease of the lungs. Disease of brain would result. (A simple hypertrophy is an

enlarged condition of the histological elements of the affected organs. (Heart, thyroid gland, liver kidneys) without any increase in number of cells. Numerical hypertrophy

number of cells is increased. Swelling is not a hypertrophy. Physiological hypertrophy increases functional activity. There is no possibility of any disease without a lesion of nutrition. The organ is underfed, overfed or badly fed.

Atrophy. As in hypertrophy there is Physiological atrophy from disease. The organ becomes smaller, it is underfed — Uterus, an example. Atrophy for the most part is a question of disease. One of the causes of atrophy is lack of functional use. Disuse makes any organ smaller. There may be back of the disease some other reason. Take progressive muscular atrophy: it may be the wasting of one limb or

both. It is due to a certain diseased condition of the anterior cornua of the dark matter of the spinal cord. There is complete waste, until the muscle is no longer able to perform its function. The atrophied muscles & tissues suffer because they are not fed. Take paralysis hemiplegia - can't use leg or arm or uses them badly.

Functional inactivity, one of the causes. Another cause is overuse, or injury, as in a horse (Sweeney) shoulder atrophied - caused by massage. Another cause is certain drugs. In Alps, best specimens of atrophy. Bad flour from Ergot of Rye. Phosphorus produces similar conditions. They so interfere with nutrition that atrophy follows. It sometimes follows simple mechanical interference with the circulation. If there be a tumor or luxation, the muscles are cut off by the luxated bone. Sometimes an enlarged organ is cut off & produces atrophy in another organ, by compression merely. In every case of atrophy there is an underlying lesion of nutrition

Changes of form. An hypertrophied or atrophied organ must change its form. Hypertrophied heart - left ventricle most often because it is called upon to do the most work. If there is obstruction to the circulation anywhere, the heart does extra work - becomes hypertrophied & changes form & size. Liver - right or left lobe will suffer.

Changes of structure also affect the function. The whole question of changes of structure is by some put under the head of Degeneration. It might be so put because if there be any change of structure from normal tissue it is almost impossible to conceive of a change of structure of an organ or tissue without at the same time referring it to a degenerative process.

Albuminous infiltration is a degenerative process. Cells are of 3 kinds:

1. Simplest form - mass of protoplasm without any structure - homogeneous.
2. Cell with a nucleus - protoplasm in the center constituting a nucleus, surrounded by protoplasm.

3. With a nucleus & surrounding membrane.

The cells & nuclei have little grains of albumenoid matter the color of the cells & they become cloudy. If the alteration goes on to a great extent, the whole organ swells, because the cells increase in size by the infiltration into the cells of the albumenoid granules & take upon themselves a cloudy condition. It comes quickly & goes quickly. If it stays, the organ must suffer in function.

Cloudy swelling or Parenchymatous degeneration or albuminous infiltration.

Changes in Structure. - Degeneration, degradation of tissues by disease. The function is interfered with, not matter what the change of structure - proportionate to the degree of change.

The proximate cause must be lesion or change of nutrition.

Changes occur by infiltration, & metamorphosis.

Infiltration - Dropsy.

When any organ swells, the swelling is due to the fact that the flesh is infiltrated. This is not what is meant when we speak of infiltration as one of the methods of change of structure. I mean that the histological elements of the tissue have undergone a change by having something added, & in each particular case, it is something which will be indicated by the word which is used to indicate the quality or character of infiltration.

1. Pigmentary - when pigment infiltrates an organ.

2. Fatty.

3. Cretaeous.

4. Albumenoid.

5. Amyloid.

A tissue or organ which has undergone fatty infiltration, is changed as to its tissues. As a rule the organ is increased as to its bulk. Sp. Gr. lessened. It weighs in height but is lighter for any given quantity.

Fatty infiltration, or change, or degradation often occurs as an expression of the presence of some poison in the blood.

Syphilitic taint. Inflammatory tissues, long continued

presence of some poison in the blood as phosphorus or Arsenic.

Little granules of fat make their appearance within the cell, increase in number, lie side by side within the cell wall. They soon coalesce, displace the protoplasm of the cell; there remains inside a globule of fat. This takes place in the presence of a great many disease conditions. & retaceous infiltration. Certain salts have been deposited & a tissue is ossified. Since it affects the coats of the arteries & capillaries it renders their walls fragile. The walls of the vessels which have undergone cretaceous infiltration, would break easily: gangrene results.

Fatty & cretaceous changes are found associated with increasing age. Cretaceous change is an expression of a general breaking down of nutrition. The whole subject is in doubt. Nature sometimes throws it off in the form of tubercles from the lungs.

Pigmentary infiltration. In certain persons, under certain conditions, certain organs or tissues take upon themselves certain pigmentary changes. Pigment is deposited where it does not exist. Certain tissues are colored - Rete mucosum.

On the amount of pigment depends race peculiarities. All the coloring matter comes from the haemoglobin of the blood. It is not its presence that gives the color, it is the haemoglobin being deposited in the tissues, & by certain changes is converted into haematoidin & it is the presence of the latter which gives the color. Sometimes it occurs simply from ruptured vessels take the blue spots that mark changes in nervous conditions, - take scurvy.

Capillary walls break down & spots occur all over the body. In some cases there is no change. This coloring indicates a change in the condition of the blood & cells. (Bruise: Cells out of walls.) We get rid of pigment through the bile or urine.

This coloring matter exists in three forms:

1. As Granules.
2. As Crystals.
3. Diffuse.

There is an amyloid or albumenoid infiltration.
 It was found that when amyloid or albumenoid substance was treated with Iodine, then with Sulphuric Acid the reaction was blue & therefore because of its close resemblance ^{in color} to starch was called Amyloid change. It is a peculiar substance which is albumenoid.
 In the tissues affected the cells themselves are infiltrated. The cells & connective tissue are filled with this amyloid substance. Sometimes called Lardaceous change sometimes Waxy degeneration.

It is an expression of a change of nutrition & occurs for the most part with high temperature as pyæmia & in connection with fracture of a bone when there is a long course of suppuration also as the result of some poison.

Metamorphosis. - Transformation. Cells disappear & take upon themselves the perfect quality of new substance.

Kinds 1. Fatty 2. Mucoid. 3. Colloid.

In fatty transformation there is a granule within the cell wall. Nucleus off to one side. Protoplasm changes - cell filled with fat granules. They do not coalesce as in infiltration. A peculiar appearance is given to the metamorphosis - it takes upon itself the qualities of a fat cell. Sometimes called Mulberry Cell or granular cell. It takes upon itself the qualities of the cell in which it is found. After this peculiar cell shall have existed for a greater or lesser time, a second change takes place in fatty metamorphosis. The cells break down, coalesce & have a creamy mass which undergoes greater change, & the blood from the surrounding vessels permeates it & it is rendered milky.

A fourth change is undergone, called the process of caseation. There is a complete change in the organ which undergoes fatty metamorphosis - it is converted into entirely new tissue. The causes of these changes we do not know, only in the different cachexia - Cancer, Syphilis & other blood diseases. They alter the character

of the blood & nutrition.

Mucoid change. It is mucine. Physiologically mucine is in the placental cord & in umbilical cord & is an expression of the breaking down of vitality.

Pus must be changed into milk before it can be reabsorbed.

Colloid. The colloid cancer is not a cancer, it resembles glue. The two changes Mucoid & colloid are so closely allied except as to their color that some confound the two.

Changes in Consistence. Organs may harden & are then said to be indurated. They harden whenever for any reason some change takes place in the histological elements. Or in the connective tissue which separates them or binds them together. Which would increase their weight. Induration would follow as the result. All excretaceous change would harden the organ.

Change in bone (Eburnation). The peculiar structure in bone may be lost & we have a dense mass of bony tissue which is indurated bone.

Sometimes an organ undergoes something of induration without being indurated. Take that which occurs whenever certain conditions produce it. When one cavity or the other of the chest is filled with serum. The droopy of the chest gradually squeezes the lung back. It is squeezed back toward the spinal column & loses its use as a lung & its cells are so pressed that it is indurated. It is no longer a spongy mass, it is hardened by compression.

We have an indurated organ diseased. We have just the opposite of that soft organ or tissue in disease that is very important. The best specimen is in nervous cases in the brain or spinal cord. All the brain so softens that it is the consistence of cream. A gentle stream of water would wash away all the soft part. That is followed by very very grave conditions, but independently of that in a great many diseases, particularly in the asthenic fevers the tissues undergo a change,

they soften, takes typhoid fever:

The spleen & heart itself are softened; failing to get from the blood that which is necessary to the continuance of the function & integrity of that organ; it softens under that deprivation until you take the heart & it flattens out. So do the lungs soften. Gray hepatisation occurs.

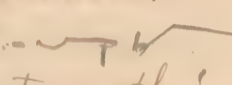
Bone softens in disease - that particular form of disease bone in which the hard elements are absorbed leaving the soft animal elements to be taken up.

There is hardly an organ which may not undergo softening under diseased conditions. In every case whatever may be the remote cause whether it be poison, blood, inflammatory process, the proximate cause is always a question simply of change of nutrition (Crall bladder overfilled - false incubation).

Changes in Site: - More frequently met with in chest, pelvis or abdomen as hernia or disease of the uterus. The spleen becomes enlarged in consequence of the presence of malaria. It becomes displaced; recognized through the wall of the abdomen, because of change of site. It is extended forwards. (Compression of the intestines or pleura.) All these changes of site are of greater or lesser consequence. In some cases may become the cause of disease. (Floating kidney usually of the right side.)

QUIZ.

1. How many changes do the solids of the body undergo in disease states?
2. What is disease?
3. Define Pathology?
4. Why called the Physiology of disease?
5. What is hypertrophy?
6. Under what conditions do organs become hypertrophied?
7. Give instance of hypertrophied organs from antecedent disease.
8. Instance of hypertrophied organs preceding disease.
9. What structures show hypertrophy best?
10. What is simple hypertrophy?
11. What is numerical hypertrophy?

12. How may an organ get larger without increase in number or size of cells?
13. What is Atrophy? Simple & Numerical.
14. What is infiltration?
15. How many kinds?
16. Difference between infiltration & metamorphosis?
17. When double organs. Kidneys - 1 diseased - 
18. What is degeneration? Infiltration & metamorphosis.
19. What are the reasons for calcareous deposit?
20. How is pigment laid down?

Fluids of the body.

Changes in the fluids of the body may be in
1. Quantity 2. Quality 3. Site

(Solicicists & Humeralists.)

The inter relation of the fluids & solids of the body is such that one is practically the other. The blood has all the properties chemically of flesh, so that it has been spoken of as the "flowing flesh". Flesh itself is solid blood. The whole body is made up from the fluids — blood is flesh & flesh is blood. If we look closely at the fluids & try to group them — we have:

1. Blood.
2. Fluids that enter the blood.
3. Fluids that proceed from the blood.

We will study the changes in the blood — quantity & quality or the general pathology of the blood. All fluids of the body may be placed in two groups.

1. The blood
2. Those fluids which enter the blood.

The blood has a definite composition, yet its quality may change by virtue of those fluids that are constantly entering as a result of the products of assimilation.

That the quality of the blood should be changed by the character of the food used is the result of secondary assimilation. It is always changing with regard both to quantity & quality. It must be changed constantly by the fact that the food is

or is not good or sufficient: Again, it must be constantly changed by the fact whether the food undergoes proper change in the digestive process or not; also by the fact whether the juices of the intestines, of the glands, the glandular secretions act sufficiently, so food shall be properly qualified to enter the blood in order to maintain the blood at its physiological standpoint. Thus change in quality of fluid **that** enters the blood would change the quality of the blood.

Respiration of the lungs. Suppose the CO_2 does not find its way out of the blood in the lungs, that is to say, suppose the O of the atmosphere is not taken up, then we have the CO_2 circulating in the blood that ought to be sent out of the blood & the blood becomes poisoned.

Suppose Urea (largely the product of the liver) has undergone a change, was not properly secreted by the kidneys, as is often the case & see what would be the result. We would have all the forms of Uraemic poisoning - this would be the retention in the blood of matters that ought to be excreted. Again, we have matter entering the blood as the product of destructive assimilation. There are two changes going on in the body constantly: 1. Process of building up.
2. Process of tearing down.

All the products must enter the blood. Suppose any of these products fail for the time being, suppose they enter the blood & remain there for a short time only, but suppose they are persistently there, we have changes in the blood which are expressions of disease.

Physiological changes must precede pathological changes.

The fluids that are separated from the blood are grouped into

1. All the fluids that are used in the growth of organs & tissues up to their physiological standpoint.

These processes are always going on (nutrition, assimilation) they are constantly building up - there is constant selection from the blood, of those elements which go to support each organ or tissue up to its physiological standpoint. A part of these fluids enter the composition of the organs they go into.

2. Those fluids that are expended in the maintenance of the functions of certain organs.

We have for instance the liver secreting bile; the pancreas the pancreatic juice; the stomach the gastric juice &c. Each organ takes from the blood those fluids which are necessary not only for its maintenance but for the maintenance of its functions; - & so it is that each organ undergoes a condition of physiological hyperaemia, when that particular organ is engaged in the performance of its particular function. It is important that each organ shall secrete from the blood its particular secretion. Suppose the organ fails to perform this function, suppose there is an excess on the one hand of any given secretion, or a lack of any given secretion, or that the function is not performed at all, then these must remain in the blood these elements which are physiologically separated from the blood by those organs & though we do not know precisely the result we know that disease must result.

3. That broad class which enters the blood simply to be carried from the blood.

Take as an illustration the urine. It is separated from the blood, purely & solely, that it shall be carried away from the blood & out of the body. Suppose the kidneys fail in its function, then there occurs uraemic poisoning.

The blood is constantly undergoing change of quality by virtue of failure of some organ to secrete up to its physiological standpoint, that particular something which is its function or duty to secrete. The blood takes up from diseased local tissues, elements which go to poison the blood.

Take the result of gangrene; sometimes the blood takes from some local disease some elements which produce septicaemia; then we have general disease resulting from local disease. The blood itself is poisoned because of the entrance into it of some septic fluid or some substance with a septic quality capable of poisoning the blood. This occurs very often, then is a constant source of danger to the blood. Besides that we have local disturbances of

the circulation of the blood as well.

That the blood does ~~not~~ exist in excess physiologically at some time in any particular organ or tissue is proved by the blush of shame. The capillaries become filled with blood & a flush of shame results. Take that condition that follows from a reaction from cold (symbolizing warm hands) capillaries filled to make hands red. This all proves that the blood is capable of being sent to certain localities in excess of that which is natural.

Change of site. They are local disturbances when an organ gets less blood for any reason than it ought to have. We say that organ is the subject of local anaemia that occurs very often. The organ is pale & dry especially if exposed to the air.

Local Anaemia may be caused by circumstances or causes acting within the vessel itself, which supplies the tissue, or outside of the vessel. Those causes which act from within the vessel are the diseases of the vessel walls themselves.

Suppose the inner coating of the vessel becomes thickened, the blood cannot pass that part of the vessel because it is smaller than it ought to be, the blood is cut off from every part beyond. Local anaemia follows.

A clot may form in a vessel. The process is called Thrombosis. The vessel is thrombosed. It may be something beside a clot. It may end & start from other cause. A clot ^{is formed} in the vessel usually without some antecedent disease of the walls of the vessel & in proportion to the degree that the vessel is plugged or stopped up by that clot, in that proportion will the blood be cut off in that vessel. If the thrombus grow till it completely fills the vessel, all the blood is cut off & whatever circulation it gets, must come from collateral circulation. The blood is sometimes plugged by an embolus process. Called Embolism.

An Embolus is a fragment from a clot formed in some other vessel. Usually it relates to arteries. A Thrombus relates to both arteries & veins. A clot is detached by the current of blood & carried with it, reaches a vessel & is swept along in that vessel until it gets to a point which is narrower than the diameter of the clot itself & it is

arrested. That is to say, that vessel is plugged by an embolus. That cuts off all circulation & produces local anaemia.

By virtue of the operation of that nervous center which presides over the caliber of vessels. (Proved by blush of shame & schoolboys hands.)

A greater quantity of blood gets into a tissue than belongs there. (Controlled by vaso motor system of nerves.) So that if for any reason: A spasm is produced in a vessel by virtue of the fact that the size of the vessels is made smaller than natural, it receives less than the normal quantity of blood & we have local anaemia.

Collateral Anaemia. Anaemia produced in any given point by virtue of the fact that some other point received more than its natural quantity of blood. Suppose it be divided between two: if one gets 3 there is but 1 left for the other.

Hyperaemia is the opposite of local anaemia.

Anaemia means without blood but not used in that sense here.

That hyperaemia is capable of occurring & does occur, furnishes the explanation of all those processes which go to make up the phenomena of Inflammation.

Local determination of Blood

Congestion of Blood.

An organ may get more than its normal quantity of blood — hyperaemia.

Hyperaemia may be collateral or compensatory.

If one organ gets too little, some other organ gets too much.

Hyperaemia is Active or Arterial — Passive or Venous.

In one case the processes are quickly wrought, in the other they are slowly performed. A mechanical abstraction concerns

^{veins exclusively} We have active processes which concern almost the terminal arteries; other processes which concern almost exclusively the veins & capillaries. We have hypostatic congestion which is purely mechanical.

A Hypostatic Hyperaemia is that condition which results from position when the heart is slow.

When any exhaustive disease, any long drawn out suppuration

particularly injury to the bones, weakens the muscles it weakens the heart also; & when a patient gets up from typhoid fever or injury or from any condition which results from complete exhaustion, from great muscular prostration, the heart is weakened as any muscle of the body & it cannot circulate the blood as it does when in its normal physiological condition. Then it results that the blood current is slowed & there is a tendency to hypostatic congestion. If a patient lies flat on his back all the time, there is a constant tendency to the settling of the blood in the capillaries to the most dependent parts - hypostatic hyperaemia.

We must guard against hypostatic hyperaemia. There is a congestion of the back part of the lungs. Don't permit patient to rest hours & hours upon the back, prop him up to resist hypostatic congestion.

These all relate to local disturbances of the circulation.

Another condition in local disturbance is hemorrhage. Blood may escape from an artery, a vein or a capillary. If from an artery it is said to be arterial.

Arterial hemorrhage - there is rupture of the walls of an artery & the blood spurts out in jets.

It is not necessary to a hemorrhage that the vessel wall shall be ruptured. If it is ruptured hemorrhage is said to occur by *Rhexis*. (*Rhexis* - broken vessel wall.) In certain conditions almost certainly with disease of the vessel wall, the blood finds its way through the wall of a vein or artery & when it does it is said to be *from* - diapedesis.

If the blood breaks up the tissue in which the hemorrhage occurs the clot is called *Haematoma*.

That does not always occur. The blood permeates the tissue in which it is extravasated, it is then a hemorrhagic infiltration. They produce the greatest possible forms of disease.

We ought to know when they occur & what the effects are. The blood passes through the vessel walls & forms a kind of tree - the branches from the heart, the root towards it, or in case of a triangular space with the apex of the triangle towards the heart. It occurs as well from the

simple plugging of vessels. Sometimes the blood passes through the vessels without tearing. Sometimes it tears the tissues & forms a clot by tearing.

The tendency to hemorrhages is produced by certain diseases conditions & by certain drugs. It exists also sometimes naturally, such condition called haemophilia & the subjects are haemophilists. There exists in certain families a dyscrasia - a constant tendency upon the slightest provocation or injury to enormous hemorrhages. It is transmitted from parent to child.

There is a tendency to hemorrhage whenever the blood walls themselves are diseased, as in scurvy, in which there is a marked change of the physiological condition of the blood said to be produced by the deprivation of vegetable food. Now, we do not know. There has been much discussion about it. Half a century ago when sailors were sent on long voyages without sufficient quantity of good vegetable diet they suffered from scurvy & the constant tendency to hemorrhage was one of the symptoms of that disease - oozing from the gums.

Some medicines are poisonous. Those who work in phosphorus get poisoned & are particularly liable to hemorrhage.

The blood not only undergoes changes as to its location - that is, distribution in the body, but it undergoes changes in quality. Destruction of the fat elements to a greater or less degree in a general way takes place.

We have therefore: General Anaemia; that is to say the blood for some reason is so deprived of its red blood discs that the subject suffers from general anaemia.

The quantity of the blood may change but little physiologically & doubtless there is a change of quantity of all our bodies; the entire quantity differs in the same person at different times, & in different persons always.

General anaemia is best produced by rapid hemorrhage (oligaemia). The hemorrhage takes away from the mass of the blood just the quantity represented

by that hemorrhage. The subject of such a hemorrhage would bear it well or not owing to certain differences. Women bear hemorrhages better than men. If a hemorrhage occur previously by bleeding, we could not bear blood letting as well in erect posture as in recumbent posture.

In old times the Doctor put patient in bed & bled him till he fainted, in order to produce a decided effect. If the blood was lost rapidly then the patient could bear the loss of less blood than if it escaped from a smaller opening. A less quantity lost rapidly would produce a greater effect than a ~~smaller~~ ^{larger} quantity lost slowly.

Lie in a recumbent position - the blood flows on a level - the heart would have less labor. If in an erect position or posture the blood must be sent to the brain uphill against the force of gravity. If the brain does not get all it needs, the patient faints.

General Anaemia without loss of blood. There are certain conditions in which the red blood discs are destroyed in great quantities. The quantity of haemoglobin is decreased - we have an increased quantity of ^{pus} blood discs. The blood, circulating very greatly increases number of white cells, loses its characteristic qualities as blood. It won't coagulate.

General Anaemia is the destruction of the red blood discs, together with the destruction of the haemoglobin of the blood. The blood loses its ruddy color - this is associated with disease conditions sooner or later. We can't always find out what produces it. All diseases produce it.

To express the idea that the mass of blood is decreased whether by rapid hemorrhages or smaller ones, the proper word is oligaemia. The red blood cells decrease in number & the haemoglobin of the blood decreases.

Anaemia - impoverished blood. The condition in which anaemia is induced, coincident with the destruction of the red blood discs & the decrease in quantities of haemoglobin. There are also in certain cases of anaemia certain bodies which are found in large proportions, called microcytes. Condition called Microcythaemia.

Thrombosis, a clot may form in the heart, in an artery

or in a vein. So that all the blood may become the subject of thrombosis. It may locate in almost any point. It particularly concerns veins more than arteries.

The thrombus is usually located just in advance of some point at which an anastomosing vessel is given off; still it may be located in any point. It may be stratified or unstratified blood coagulating quickly. It is red throughout. It extends usually backward toward the heart to that point at which the first anastomosing vessel is given off.

A Stratified Thrombus, is an alternate layer of red ^{white} matter sometimes a concentric layer - that indicates an old thrombus - one some time forming. You can tell whether it was recently organized, by the fact that it was unstratified. An old one is built up layer by layer. The white layer is due to the fact that the white discs have a tendency to sink & attach themselves to any roughened surface with which they come in contact.

Certain words are used to indicate the precise quality or location of the clot & also the size of it - small or large.

A Thrombus may completely obstruct the entire vessel & then is called an occluding thrombus. Sometimes it lines the whole vessel wall being attached all around the wall but in the center of the clot it is permeable to the blood then it is called a parietal thrombus; or it may be attached to one side only & not occlude then it is called parietal.

A thrombus is increased very often so that which was parietal at the onset, by successive deposits is converted into an occluding thrombus. These all relate to the character & location of the thrombus in relation to the vessel.

Marantic thrombus is produced by some condition closely allied to that called marasmus due to some blood taint.

There is a compression thrombus produced by pressure outside the walls.

If the blood current is interrupted along the course of the vessel for any considerable period, a clot is formed.

in vessel. Compression thrombus.

Whenever the course of the blood is interrupted in a vessel for any considerable period, because of that interruption there is a tendency to clot.

Dilatation thrombus. The same thing occurs precisely as in compression. The same underlying cause is present there is slowed blood current at that particular point. Take varicose veins sometimes very marked. When the blood current, passing through the natural lumen of the vein, reaches that sac it is slowed it tends to clot. That condition of varicose veins often produces a thrombus.

Traumatic Thrombus. Causes.

1. Retardation of blood current.
2. Changes within the vessel walls.
3. Changes in the blood itself.

Retardation of blood current. The blood current may be retarded first by pressure from without the vessel, for instance, a developed tumor along the course of the vessel compressing the vessel walls, the current is obstructed wholly or in part. Organs which are displaced or hypertrophied press upon the vessel & a thrombus forms. Large effusions of serum are in the cavity of the body & large swellings due to inflammatory processes, fill the abscesses, compress the neighboring vessel & a thrombus forms.

2nd If anything affects the vessel wall itself so that the calibre of the vessel is decreased the blood will be decreased.

Causes operating from within the vessel.

1. The current is often retarded by a fatty degeneration in consequence of which the calibre of the vessel is decreased.
2. Dilatation - in veins & particularly in valves when varicose condition is great - valves & veins are broken down. Valves make little pockets - so if the valve be broken down, the cup formed by the particular shape of the valves would be filled with blood & the cavity enlarged, the blood will sink, due to a new channel pressure. The general flow of blood does not affect that in the pocket & you have dilatation.

Whenever the heart is weakened - like water in a river, when the river is high & rapid there is little tendency to deposit dirt, but let the current be slower, & deposition of dirt will be commenced - so lacking the vis a tergo the forcing action of the heart from behind, the blood tends to settle down & there is a constant tendency to the organization of thrombus.

Sometimes a mass of pigment finds its way into a vessel & in consequence it helps to obstruct the course of the vessel & then the mass of pigment may become a cause for the organization of thrombus.

Fatty degeneration of the walls is a cause.

3rd A large class of thrombi is due to changes in the blood itself. Whenever the blood is impoverished as the result of exhausting disease as in Typhoid fever, Puerperal & constitutional Syphilis & in many forms of marasmus.

In consequence of changed condition of the blood itself there is a constant tendency to the organization of thrombus. In pyæmia, all those conditions, the blood itself losing the self supporting quality, tends to clot. This tendency to clot becomes a potent cause. It is always found associated with retarded blood current.

In the dead room you will find good specimens of Post mortem class of thrombus.

Sometimes the surgeon is puzzled, if he knew nothing of the history of the case, to tell whether a clot extending from the right ventricle up into the right side was ante mortem or post mortem. A post mortem clot is homogeneous, an ante mortem clot must be patched with greater or less force to the vessel walls in which it lies. An ante mortem clot is easily detached from the vessel. It sometimes extends for a long distance from the opening of the pulmonary artery clear to its branches.

A thrombus leads step by step to an Embolus.

An embolus may be anything. It may be granular pigment or a collection of fat cells or a mass of fibrin anything which may find its way into a vessel & obstruct

may be swept forward in the current of blood until it reaches a point at which the caliber of the vessel will pick it up. Condition of plugging is Embolism.

The distinguishing characteristic between thrombus & embolus. The first is organized at the point where found after death; an embolus is brought from somewhere else.

The blood will be cut off within the vessel, that is, there will occur local anaemia in the parts supplied by the blood vessel in proportion to the caliber of the vessel is occluded.

Emboli are formed by disintegrated thrombi. The blood current tears off a little or large mass in the current & if it be a soft pulsatile mass it will take the form of the vessel in which it is formed & completely plugs the vessel. Every drop of blood is cut off.

The effect of a plugged vessel would depend upon certain conditions. The effect upon this area supplied by the vessel will depend upon the fact whether it is supplied by other vessels or not, other things being equal that is, whether blood will reach the same area through the collateral circulation.

Some vessels suffer more than others, because in some organs & parts particularly the lungs & kidneys, the blood is supplied through true end ~~of~~ arteries (Circle of Willis) all the vessels are given off within trinch in some cases.

They are true end arteries - they go straight to the part & the part is supplied with no other vessel. There is no collateral circulation. The organ must suffer deprivation of blood if the vessel is plugged. True of kidneys & lungs. If you plug the pulmonary artery, just exactly in proportion as you arrest the current in that position will the blood be cut off & in that proportion will the symptoms be instantaneous. People gasp a few minutes & then die. The pulmonary artery is filled with a plug. The blood is cut off on the right side & can not get through the lung. Another point, if an embolus start from the cardiac side, it reaches the heart, it stops

forward in the arterial tree, there is no telling what point it will reach.

The blood gets through the lungs & is brought back to the right side of the heart by the pulmonary vein. Suppose a thrombus exists in one of the pulmonary veins. Suppose that a detached part of the thrombus which constitutes an embolus, is swept forward in the blood current, passes easily through the heart into the aorta & goes all through the arterial tree. There is no telling at what point it may be picked up.

Reasons why at any particular point in preference to any other point. When a vessel is given off right in the line of the blood current or comparatively in the line, it is plain that an embolus in the blood current will be more likely to pass into that vessel & plug it in some of its course, than if the vessel was given off at a right angle to the blood current.



The embolus from A would be more likely to enter the vessel marked B.

Its effect depends not only upon the vessel being completely occluded but also upon the character of the vessel itself that is whether it is a true end-artery or not.

Hemorrhagic Infarction is often produced by an embolus & is done in this way:



A. Wedge shaped plug. It cuts off all the blood that comes through the vessel at that movement. The vis-a-terge is lost & the blood gets beyond the point, beyond which it is plugged & settles back. The blood in the meantime in the other arteries or vessels sweeps forward, comes in contact with the capillary loops which are filled with the blood which preceded the embolus. In some cases the filled capillaries rupture & the blood is extravasated. Capillary walls suffer & we have a clot of blood closely corresponding to the capillary loop with its apex toward the heart.

When an embolus plugs a vessel completely if it be a large vessel that fact is made manifest instantaneously.

A thrombus grows little by little. Its effects are slow in their advance. You would say there is anaemia of the brain. A thrombus is formed in the basilar part it is filled or nearly so. Symptoms indicate anaemia of the brain. What causes it? Symptoms arise, not suddenly but one by one - case of growth. In another case the patient suddenly struck down as by a heavy blow, & you hesitate, between arterial rupture & cerebral hemorrhage - Embolism of cerebral vessels. A person may be sitting quietly, all at once he becomes queer, loses himself, talks wildly, falls. There is right side paralysis as a rule often. Not because of the mechanical arrangement of the arch of the aorta. A plug is formed the patient goes down. Where an embolism of the pulmonary artery takes place immediately there is hard breathing & all the conditions that result from that fact - lips blue & all the facts go to show that we cannot get Oxygen into the lungs. He is cyanosed.

Some vessel of the kidney becomes plugged - pain, disturbance in function. Thrombus organized & embolus lodged. Disposition of a thrombus or an embolus after it is once lodged or organized or after the embolus has once plugged the vessel. A thrombus once organized may be disposed of in 3 ways.

- 1st It may go through a process of organizing.
- 2nd It may undergo a process of softening & reabsorption.
- 3rd It may disappear by disintegration.

If it disappears by breaking up into fragments, each fragment would constitute an embolus. & therefore such a thrombus is called an Infecting Thrombus, because as it is broken down the fragments must be picked up in some part of the circulation. It is very dangerous. It may result in emboli.

When a thrombus organizes the process we know why - we do not know. The mass completely occluding a vessel after a time if organization be proceeded with, is permeated with small vessels. The little shoots permeate the whole mass of the thrombus & it becomes organized.

It is a vital process which we cannot understand. The result is that the vessel is cleared up & its lumen re-established. ~~Cavalization~~ takes place - not only does the thrombus itself take up life, by being permeated with vessels, but that life takes peculiar shape, so that the thrombus conforms to the lumen of the vessel. It is ~~cavalized~~ cavalitized. That is a rare way. An Embolus may be disposed of in precisely the same way. It is rarely that an Embolus does become like a thrombus. A vessel is filled by a detachment from some thrombus. By & by, little by little, no matter what was the original shape, whether partly or wholly occluded, by a process of successive depositions, just as a thrombus is formed the embolus is added to & takes all the qualities of a thrombus. An embolus may disappear by processes the same as a thrombus. When a thrombus or embolus is reabsorbed, it is prepared for reabsorption as all products thrown outside the vessel walls is prepared. First the liquid is dissolved, then a fatty change of remaining elements, then a gradual reabsorption, then the blood flowing through the vessel.

If a thrombus disappears by being broken up, the fragments must be picked up at some point in the circulation.

Where emboli are most apt to be picked up in the circulation. An embolus starting from the cardiac side passes through the heart & is swept through the arterial stream & may be picked up anywhere but is most likely to be picked up in certain vessels as in the middle cerebral artery or in the innominate artery.

The same is true in relation to certain other circulation.

If an embolus be detached from any point in a vein it is swept forward in the blood current. It passes up & does not stop because the vessel gets larger & larger.

Take an embolus from the lower extremities. It is swept on up through the common iliac vein, through

the ascending vena cava into the pulmonary artery & is picked up by the lungs. And thus it is because of that fact the circulation of the lungs is subject to embolism. Sometimes an embolus forms in the heart.

An embolus starting from the cardiac side of a capillary will be swept through the heart & forwarded into the arterial tubes. In the Pulmonary circulation it would pass thro' the right heart & be picked up in the lungs.

There is a third point. Suppose a thrombus starts from a rootlet of a Portal vein, which gets larger & larger & is broken up in the liver & thus an embolus formed within the portal vein would necessarily be picked up in the liver. That explains how sometimes the liver undergoes process of metastatic abscesses in consequence of injury.

Hydraemia. - Watery blood.

Hydraemia designates the condition in which the fluid constituents of the blood are increased in relation to the solid constituents. We speak of it as thin & watery blood because the relation between the fluids & the solids of the blood is disturbed. It may be disturbed by simple increase of the watery constituents, increase of water - leave the solids. Decrease solids - leave water, Decrease solids - increase water.

That condition happens whenever for any reason, the albumen of the blood is destroyed or whenever the albumen of the blood is not, as a result of secondary change, manufactured. We have the extreme condition in Bright's Disease. The characteristic is that the albumen of the blood is sieved out through the kidneys. Large quantities appear in the urine. It is doubtful whether there is albumen in the blood physiologically.

It has always been believed I thought that albumen in the urine meant disease, but in later days some physiologists have reached the conclusion that there is such a thing as physiological albumenuria.

A variety of conditions causes hydraemia - sometimes found as a concomitant of pregnancy. The patient

becomes pale - putty faced; suffers from dropsy of the legs & is just simply, in such a case, an extension of the destruction of these processes that ought to go in the general process of nutrition but which fail because of the impression made upon the system by virtue of pregnancy. Because those processes that ought to go on fail to go on, a hydraemia is induced which is very dangerous. Again, it may be produced by an antecedent diseased condition which would destroy the physiological balance of the quantity of albumen in the blood.

There is that condition in which for the time being, the solid constituents are increased in proportion to the watery constituents. That is simply so when for any considerable period there is a drain away from the body of the serum of the blood. The best instance of Anhydraemia is seen in Asiatic Cholera. There is for hours or for days very rapid drain of the serum of the blood through the glands of the intestines. As a result the blood is absolutely thickened; it becomes of a larry consistence just in proportion as the fluid elements are drained away. As a result of that the danger lies - the blood fails to get through the capillaries & is no longer as fluid as it should be & there is a want of circulation & consequently you have blue skin.

Cramps all over the body are induced by the failure of the blood to circulate through the spinal cord & a condition of collapse occurs.

There is a condition called Glycosuria in which there is a large drain of sugar through the kidneys. The urine is sweet & increased largely in quantity. This condition is but the exaggeration of a normal physiological condition. We know that sugar exists in the body & that it is largely manufactured in the liver, so that the glycogenic function of the liver is one of its most important functions. It would be induced if the liver manufactures more than the physiological quantity provides. Secondly

that the sugar were not destroyed at some other point after it was manufactured. The sugar is destroyed in the lungs by oxygenation. If there were more than the normal quantity manufactured in the liver & but a normal quantity destroyed in the lungs the sugar would reappear all over the body in the blood. If the same normal quantity were manufactured & none destroyed in the lungs then the blood would become sweet. If there were a greater quantity manufactured & none destroyed, the blood would become sweet. That would account for this condition of Glycosuria.

The process is a vicious one - the kidneys do what the lungs should have done then you have the condition - Diabetes. The symptoms are simply sweet urine which you can detect by certain tests. Then again it produces certain symptoms. The quantity of urine is enormously increased. Instead of 40 or 50 $\frac{1}{2}$ in 24 hours, you have 2, 3 or 4 gallons. This enormous drain calls for the ingestion of a large quantity of fluid & so the patient is tormented with thirst. If the blood were poisoned by anything, if it were made to carry that which did not properly belong to it, then all the process of feeding organs from the blood would be interfered with also those of destructive assimilation & the patient must die. No constant symptoms except the thirst & the constant appearance of sugar in the urine.

Another condition Uraemia. This means that the quantity of urea (which constitutes the largest & most important element eliminated from the blood by the kidneys) is increased in the blood. Urea is the result of the destruction of the nitrogenous tissues of food. It is formed largely by the liver. Instead of being served out in proportion as it is manufactured, suppose it is increased & instead of circulating in the blood as it should, suppose there continued circulation of Urea. Suppose it exists in the blood in an increased abnormal quantity. Uraemic poisoning is the result.

Phenomena: headache, epileptiform convulsions, amnesia, coma, retention of urine. The same things are seen in Bright's disease. That condition of Uraemia poisoning is associated with another condition & it is said that for some reason, the urea is converted into ammonia & that the symptoms in so-called uraemia are due to the fact that urea is converted into ammonia. (A Carbonate of Ammonia is in the blood. The whole subject is in doubt.

Injected into the veins of dogs urea did not produce the phenomena although they are sometimes produced. If I fail in one case I should conclude that it was not simply the excess of urea that produced the phenomena. The kidneys fail to eliminate through the urine elements which are representations of the general tissue waste & those elements produce the phenomena.

Treatment: Warm Clothing Fl. Ext. Jaborandi. For convulsions & coma, Muric acid of pilocarpine. *See p. 98* Cyclone of phenomena eliminates the poison.

Septicaemia or Pyaemia. It is almost impossible to distinguish between the phenomena of the two. Pyaemia - pus blood. Originated at the time it was believed that all the phenomena of pyaemia were produced by the presence of pus in the blood. Now since we know beyond all dispute that pus cells & white blood cells are the same, we know that the leucocytes exist in the blood without producing pyaemia.

All injuries of the head or the bones were apt if protracted to end in pyaemia. It was believed that the pus found its way into the capillaries in the vessels because of the fact that they are so much wider in the bony tissues of the skull & the long bones - the lumen greater. The phenomena of pyaemia were found of ten in connection with injuries of the abdominal vessels. (owing to the fact that bone vessels have venous circulation), it was natural that they should argue that there should be pus in

the blood & called it Pyaemia.
(Septicaemia). Septic or putrid poison. Put a finger
in the dissecting room - next morning the finger is
sore, very little or no discharge - it does not heal, it
looks livid, discolored. Pus increases until
you are able to trace the injury along or through the
lymphatics. When the glands of the axilla are
reached, they become large & you can trace an
inflamed arm & then you begin to have fever, loss
of appetite &c. If there be no arrest of the trouble, you
will have a chill, but no fever after, you will have
heavy perspiration & a chill next day. In so called
pyaemia, there is chill, fever & sweat, this is the dis-
tinction between the two. Dull intellect, special
senses dull, typhoid state, tongue dry &c. By virtue
of a general giving way of all the processes of life
death ensues. Septicaemia enters the blood &
produces these phenomena. The blood may be poisoned
by retention of part of the placenta. Metastatic
abscesses are seen in both Pyaemia & Septicaemia.
Thrombi result & then emboli. In many cases after
death you will have metastatic abscesses in lung,
liver & joints. Pyaemia is that phenomena of hectic
fever seen in the last stage of consumption. If there
be pus manufactured, whether in the lungs, or a
gunshot wound, or by any injury or amputation & we
suffer all the phenomena of Pyaemia. In the
other case there is no deposit of pus. There is no pus
until afterwards when it is found by the phenomena
of metastatic abscesses, An embolus forms an abscess.
Pyaemia - deposit of pus. Septicaemia - no deposit of pus.
The latter due not to the circulation of pus in the blood but
to the breaking down to the elements of the pus & the reabsorption of
the elements into the circulation of the broken down products. You
might assume that it may be so. If it were then it would
be pus - it is the septicaemia. But the phenomena are
very broad. In some cases the history runs a long

course; in other cases it is short; 7, 3 or 4 days & the patient is dead. All the tissues of the body are poisoned. The nervous centers are crushed out. No organ in the body performs its function.

Hyperinosis. Excess of fibrin in the blood.

Hypoinosis. Decrease of fibrin in the blood.

In inflammatory conditions, symptomatic fevers when blood was taken from the body. It coagulated rapidly & there was left on the top of the coagulum a quantity of fibrin clot - the buffy coat & when the coagulation occurred then it was cupped.

It used to be supposed that that was due to too much fibrin but fibrin as fibrin does not exist in the blood. It is due to the presence of fibrinogen & fibrin ferments. There is excess of that in blood that produces fibrin - too much in full state of health & with inflammatory cause. The other when there is very marked breaking down of the general processes of nutrition as from presence of certain poisons.

Leucocytosis or Leucocythaemia. Leucocytes blood white blood cells enormously generated & exist in the blood out of proportion to the red cells. There should be 1 to 350 or 400. In this disease they increase to 10-350. It is a dangerous condition - an expression of grave lesion of nutrition.

Uraemia or Lithaemia. Too much uric acid in the blood as in gout - tendency to lay down in joints especially of smaller joints as of fingers, base of toes. The acid urate of soda or neutral, gen. acid-like ^{substance} same. Gently corrosive easily recognized condition by ^{itself} Rheumatic Arthritis closely allied to gout. Inflammation of joints. In some cases you will see uraemia & without symptoms of gout you will see ~~tuffy~~ ^{tuffy} topi.

Cholaemia or jaundice due to presence in the blood of coloring matter of bile - bilirubine & biliverdine.

Due to absorption & translocation of soda. Reabsorption in the blood of coloring matters in the bile which have been separated from blood in the liver. When that is true, we say that jaundice is of hepatogenous origin. Called

Jaundicaemia. Certain factors about the production of hepatogenous jaundice. When the bile has been separated but the bile ducts are plugged or when gall stone is formed & the bile is prevented from finding its way out, then the gall bladder & ducts are distended & jaundice results after reabsorption of the coloring matter. Again when there is a disturbance of respiration, there is apt to be associated with it a jaundiced state of the skin. See it in connection with pneumonia. Alternate expansion & contraction of the chest aids in compelling the gall in the gall bladder to empty itself owing to deep inspiration. When there is interruption to respiration that aids purely mechanical occurs & gall ducts & bladder are overfull & reabsorption & jaundice ensue.

3rd Condition - Haematogenous origin. Lowered blood pressure simply. When general blood pressure is moderated in diseased conditions in consequence of any grave disease, it follows that the heart not being strong the blood pressure within the walls of the vessels is decreased & that produces mechanical pressure. When blood pressure is low, condition of Cholaemia is often seen especially in connection with diseases where the blood is moderated. The blood fails mechanically. Ordinary jaundice disappears with or without treatment. Give something to act on the kidneys & skin.

Malignant Jaundice. Due to presence of cholesterol the product of destructive change of nervous tissue. Called **Cholesteremia**

Tuberculosis - Process of deposition. We do not know what it is but we know in what tissues it exists. Two forms of tubercle. 1. Gray or milium. 2. Yellow (old gray). Grey first deposited it is the only true kind to which the word should be applied. It is deposited preferably

on free mucous membrane of the bronchial tube, bowels & meninges of the brain. It is clear deposited in small granules & called ^{because} miliary of that fact. Contains given amount of earthy & animal matter. What is it? Where does it come from? Is it separated from the blood as tubercle or is it organized as tubercle from something that is separated from the blood. Dr Koch found that there were present in all cases in which tubercle was deposited in lungs or elsewhere, certain bacteria & he called it *Bacillus tuberculosis*.

Culture experiments. Inoculation of dogs.

It is communicated from one person to another this was accepted by a large proportion of the profession. It seemed to be established; somebody else tried the same set of experiments & failed - Now doubtful.

Tuberculosis is hereditary. tubercle has been found in the blood of the skin. Yellow tubercle. all the tendency of recent investigation is to this fact, one granule after another forms a knot of tubercle sometimes it takes shape of tissues upon which it is laid down. Sometimes it becomes caseaceous & is spat up in shape of bronchial air cells. Yellow tubercle is great tubercle produced by fatty change.

Transudation expresses the passage of the serum of the blood into a cavity or thro' the capillary walls into the meshes of the cellular tissue. This leads us to the subject of dropsies.

Dropsies, are general & local.

There may be a transudation into the cavities of the body & into the areolar tissue beneath the skin so as to make it general - Анаботса

When the serum ^{which} is transuded occupies some given position in the areolar tissue - Oedema.

The lungs themselves are involved. The serum of the blood has escaped & lies in the air cells filling them & interfering with respiration.

A transudate, that is to say, a liquid which is the result of transudation very closely resembles the serum of the blood. That ordinarily is a clear transparent liquid, lacking in albumen as compared with the serum of the blood - alkaline in reaction & sometimes presents color just exactly as there are present or not matters which would color this liquid. That is to say, if there be present haemoglobin of the blood that makes it red.

If fat cells, the transudation is opalescent. In all cases it has a less proportion of albumen than the serum of the blood. It is representative of that serum of the blood which has passed through the vascular walls & in making its way through these walls has made its appearance rather in a shut sac, that is one of the cavities of the body or in some tissues outside the shut sac. If in the areolar tissue - Oedema. If in a shut sac the liquid is called

Hydrops - articular	} The name is the site with the prefix Hydro.
Hydrothorax	
Hydroperitonium	
Hydrocephalus	

Ascites - dropsy of the chest or abdomen.

To the patient, dropsy is a disease.

To the physician, dropsy is a symptom.

If the accumulation is very great in ascites so that respiration is interfered with, the patient can't get his breath. The capacity of the chest is decreased & the patient must sit upright! Same with the pleura.

Causes of Dropsy.

1st Mechanical interference with the passage of the blood through the veins. When the right heart is diseased, when the valves do not close or just the opposite, dilatation of the right ventricle, the blood drawn backward instead of forward through the pulmonary artery & thus on its round through the lungs. Or if there be stenosis, suppose the valves of the pulmonary artery are thickened so that the opening is more

less, then the blood cannot get through & the consequence in either case, is that the blood is pushed back upon the systematic veins. The internal pressure in the veins is increased. That is one condition in which the serum of the blood transudes the vessel walls & you have dropsy. It is one of the most common causes of oedema & also anasarca.

2nd Changed or altered condition of the blood itself. In Bright's Disease there exists, because albumen is sieved out of the blood, that condition called Hydræmia. Thin watered blood. The blood has lessened Sp. Gr. & passes out through the vessel walls.

Weakened conditions are productive of dropsy. A patient has a chill & by reason of the protracted blood poison, the natural intoxication, the red blood discs are destroyed, the patient is anaemic & by & by because of the chronic poisoned condition of the blood, the heart is weakened, the patient is debilitated & he has oedema of the feet & legs & he may have Ascites. Again you will see dropsy following scarlet fever. It is due in that case to an altered condition of the blood. The patient knows he has suffered from acute Bright's Disease & the blood is altered, then oedema of the feet & legs follows, also of the eyelids.

A diseased heart overfilling the system & Cachexia are states or conditions, in matter how produced, resulting in breaking down of general nutrition & general condition of the patient. When due to diseased condition of heart we have cardiac dropsy; diseased condition of kidney — renal dropsy.

3rd Changes in the vessel walls themselves. There can be no dropsical effusion without some change in the vessel walls, for there cannot be a mechanical obstruction of a systematic kind, or any changed condition of the blood itself without a general lesion of nutrition, & in that general lesion, the vessel walls must suffer.

Dropsies are Active & Passive. Sometimes a dropsy comes on with great rapidity. Farmer out at work - perspires freely - rain comes on, he gets chilled, clothing wet & he goes to bed feeling badly & he has acute Dropsy & anasarca with it.

In this case there was the direct chilling & as a result of that an arrest of function of the sweat glands.

Always a great sympathy between skin & kidneys. As a rule when any of the functions of the skin is seriously interfered with, - that of the kidneys is also. The urine is high colored & scant, the skin dry in active dropsy.

Mechanical Dropsies are passive. They come on slowly as an expression of disease of the heart or kidneys. Again, there is sometimes ascites in the peritoneum because of interference of the flow of the blood through the portal vein & liver. Take hypertrophied liver with constant compression, or take atrophied liver which would be more liable to occur. Kidney - rapid degeneration, overtaxed convoluted tubes & malpighian vessels - water.

There is another chance of a dropsical accumulation under peculiar circumstances: All serous membranes are constantly secreting on the inner surface, that secretion which closely resembles the serum of the blood, simply as a lubricant. Suppose that secretion is increased & absorbents take up just normal quantity, there will be accumulation. Suppose there is no reabsorption & the secretion is the same - same result. Or suppose there is no reabsorption & the fluid is secreted in excess of normal, then you will have the extreme. Under certain conditions, dropsies occur because of that fact. As a rule you will be able to determine to which one of these classes any particular dropsy should be assigned.

A patient comes to you with dropsy:

1. Is his heart sound? You find something wrong with his heart, you know the case is cardiac. In many cases

oedema of the feet & legs accompany cardiac disease.
 2nd If no disease of heart see if there is any disease of kidney. Test urine. If no albumen, there must be some other cause.

3rd If patient is pale & emaciated & gives a history of some disease producing agency, it is dropsy of debility.

4th Ascites (most common) we see many passive dropsies to one acute.

5th Diseased liver interfering with portal circulation - Portal dropsy.

6th There is probably either first or last, in those cases where dropsical accumulations follows inflammatory processes. If that were true you would get a history of peritonitis, in one case very slow. Wet pleurisy there is transudation, chest filled on affected side. Slow progress of inflammatory processes.

Treatment Pericardiac dropsy give

Tr. Strophanthus grtt vi every 6 hours
 or Strophanthine gr $\frac{1}{96}$ - $\frac{1}{4}$ gr

give hydragogue cathartics & Tr Digitalis 3 ss.

If dilated right heart or valvular insufficiency, you could not cure the heart. Sustain the heart & get rid of the dropsical accumulation as best you can.

Suppose the patient is strong, not diseased, not broken down, suppose he is anasarca & there is dropsy of one or more cavities in addition, then you would purge him in hope that the accumulation would be broken up.

Sometimes a dropsy is cured by something the patient himself has done, as in Hydrocele Iodine & alcohol & solution of K.I. had been injected - no result. He got drunk, had nausea, vomiting, diarrhoea & when he got up, hydrocele had disappeared.

If patient is strong give purgatives that will produce watery discharges - hydragogue cathartics - Pulo. Jalap. Comp. & Cream of Tartar equal part, - teaspoon full, night & morning. If he has diseased heart & cannot bear Purgation give Tr Digitalis or better, Inf. Digitalis, table

spoonful night & morning, supporting action of heart in addition. Or give Digitaline for weeks, months, years gr $\frac{1}{60}$ increased to $\frac{1}{5}$ night & morning. Digitalis act. on kidney as well as on the heart. Old practitioners used to give Calomel & Pulv Scilla, sometimes combined with K. M. the object being to produce the specific effect of Hg. Phyalism, not profuse mercurial salivation, sometimes cures ascites. You will find in passive dropsy results from large doses of Murate of Ammonia. It acts largely on the glandular system. In Germany it takes the place of K. I. It is classed among expectorants. It is eliminated from the mucous membranes, acts also on serous membranes. Dose Mur. of Ammonia 5-30 gr. to be increased gradually. When dropsy is renal control renal trouble. You cannot cure Brights disease. In Acute Brights disease watch the patient place him under proper hygiene & let him alone.

Patient recovering from scarlet fever, pulse gets quick, skin hot & then legs & feet, eyelids & mouth & whole body is swelled - Desquamative Nephritis. The kidneys are inflamed, apply some poultice over kidneys - Turpentine. Give Tr. of Fe. or Carb. of Fe. or Ferrum Selenate. The albumen of the blood is being sieved out. Fe. tends to overcome the anaemia & build up patients blood.

Some treatment. Diaphoretics, Diuretics. Give Tr. Elaterium gr $\frac{1}{2}$ if dropsy is of the liver. If dropsy is of the liver, persistent chronic intermittent ague all spring & fall, anaemia, loss of appetite, Give Fe., good food, keep room at even temperature, good hygiene, warm dry atmosphere, give Hg. - Calomel & K₂Cr₂O₇ + Pulv Scilla. Comp Jalap 3i ter die.

Tumors. A tumor is a non-inflammatory growth, circumscribed & has characteristics of a parasite. Tumors are classified according to their histological elements. Mucous, Muscular, Fibroid-Fibrous Myoma.

Four Classes of Tumors.

- 1st Those that represent the embryonic conn. tissue, ^{small} {class}
- 2nd Those that represent matured conn. tissue,
- 3rd Those that represent epithelium & conn. tissue.

Epithelio connective tissue.

4th Higher tissues

There are five belonging to 1st Class.

- (a) Sarcoma. representing granulation tissue as gran. wounds.
- (b) Myxoma. " mucous tissue.

Of matured connective tissues.

- (a) Fibroma. rep. fibrous tissue.
- (b) Lymphoma " lymph cells.
- (c) Osteoma " bone.
- (d) ~~Lipoma~~ " fat. Lipomas.
- (e) Chondroma " cartilage.

Of Epithelio connective tissue.

- (a) Papilloma rep. papillae of skin.
- (b) Adenoma " secreting gland type.
- (c) Carcinoma " Cancerous growth.
- (d) Anomalous.

Of Higher tissues.

- (a) Myoma rep. muscles.
- (b) Neuroma " nerves.
- (c) Angioma " blood vessels.

Some of the tumors are mixed. Many undergo a fatty change. Many which are hard & solid at first, become soft & ulcerate, they undergo complete change by breaking down molecule by molecule. Even in bone itself as in caries & gangrene you have results of that fatty change as

Colloid & Amylaceous Metamorphosis. There is change in physiological aspects, so that each tumor must be studied by itself. Some of the above tumors are malignant, some are not.

Osteo-sarcoma - Type of one of higher & one of lower tissues combined, that makes it malignant.

Carcinoma. Cancers have been assigned to

half a dozen groups. A cancer consists of a certain peculiar organism & now they are all referred to one type which is this: it consists of connective tissue in connection with epithelial cells. It is of epithelial descent. The connective tissue may be little or great in quantity. If it be very great, you have one form of tumor as to the physical qualities. If there be few cancer cells & much connective tissue, it is called Scirrhus. It consists of connective tissue bed or network - alveoli - little groups or juttings representing the bed in which the tumor lies & these alveoli are filled with epithelial cells. This form is hard. Cut it with a knife - it creaks. It glistens when cut. It has comparatively few blood vessels but it contains a viscid liquid. If you scrape with a knife, you get a clear, sometimes milky fluid known as cancerous juice. It was thought that when brought under the microscope, you got a spindle shaped cell, which represented a cancer & nothing else. But that position had to be abandoned. All cancerous growths are simply: a connective tissue bed with epithelial cells. Encephaloid cancer of consistence of brain. It has a large proportion of epithelial cells & a small proportion of connective tissue. ~~The~~ cells give to the growth a soft appearance.

Colloid cancer. colloid degeneration, or infiltration with colloid matter. It is a glue like cancer.

Epithelioma - true cancer. This represents particularly the type which you see in the epithelial cells in the skin.

It is likely to make its first appearance on the skin. It may start from some mucous membrane - a hard watery like excrescence on the outside. It undergoes a change, becomes more & more vascular, until by & by, by virtue of fatty change ulceration is formed, the skin is broken & the cancer becomes an open, ragged, jagged mass of ulceration. So with other forms. One form of cancer replaces another.

Primary first makes its appearance.

Secondary is the result of constitutional intoxication & some organ is affected secondarily. For instance, we have a type of hard cancer - commonest form. But by virtue of the spread of the peculiar cancer poison, the glands of the axilla become involved & grow, & if the cancer is not removed, the glands become involved in the cancerous process. Organ after organ may become involved. As to primary cancer in order of frequency: - 1 Mammary Glands. 2 Uterus. Secondary Cancer, 1. Lymphatic Glands, 2. Lungs; 3. Liver.

The Encephaloid cancer frequently follows the scirrhus cancer in a few weeks after removal of the latter.

FEVERS. Degree of temperature depends on nature of tissue. Four conditions:

1. Increase of temperature
2. " " action of heart
3. " " consumption of water
4. " " nitrogenous tissue waste

Increased fever & one or more of these conditions are connected with almost all forms of disease.

When fever is connected with some organ it is symptomatic. - Surgical fever - that is symptomatic of an injury. - When there is no inflammation of any particular organ, but there is a fever with all the essential elements which represent a poisoned condition of the blood from one cause or another, the fever is idiopathic.

Fever is either symptomatic or idiopathic.

Highest fever is sunstroke. Much urea is eliminated.

Disease of Temperature. Normal $98\frac{2}{3}^{\circ}F$.

In fever, temperature may run up to 112° though that is rare. $105-6-7$ is not uncommon.

If temperature is over 100, patient has a fever. You might now & then come across a man with normal temperature of $99\frac{1}{2}^{\circ}$. $105-6-7$ is threatening.

Whether fever is idiopathic or symptomatic, if temperature is 106 - bad prognosis. That is the danger line. Just as temperature goes beyond 106 in that proportion is your patient in imminent danger. Line of temperature very important. Clinical thermometers will often tell you patient is not very sick; on the other hand an excessively high temperature will show you danger to patient, where other facts would make you think it was not. It will cause you to make a differential diagnosis.

You are called for a man in the street - You don't know whether he is dead or not or subject of concussion of brain, cerebral embolism or rupture of cerebral vessel. If you get depressed temperature, he has had cerebral hemorrhage. After all you might make a mistake. In a certain class of diseases we have absolute temperatures.

The tendency in all such cases is to get the typical temperature. An alternate rise & fall morning & evening is characteristic. Different in different cases.

The tendency is to get a fixed temperature for different fevers. Increase of tissue waste. Despite any quantity of food taken, the patient loses weight. High temperature of consumption. Patient wastes & loses weight. It increases tissue waste. In some forms of disease & in fevers especially, we know there is an increased waste of nitrogenous tissues. There is increased quantity of urea passed thro' the kidneys. Sometimes in fevers the quantity of urea is not increased - exception.

(Good reason why this is so.)

Increased consumption of water. The thirst of fever is connected with the fact that the tissues are undergoing change, cry out & demand water.

Increased action of heart. Pulse rate just barely increased, or so rapid you can scarcely count it. Why that is so I refer you to the books. The force is also largely increased. The whole subject is involved in doubt. Increased respiration (not essential)

follows increased action of heart necessarily altered. The blood must be decarbonized. The moment the balance is destroyed there is danger. The balance between the two is so intimate that one follows upon the other. The fact that the blood is sent to & from the lungs oftener than in health explains why the number of respirations is increased. Certain other facts are referable to the nervous system. Pain, more or less disorder of special senses, delirium. Why brain should be disordered is not surprising. increased temperature & you would expect disordered functional phenomena. Brain, spinal cord, special senses. Temperature measures grade & gravity of fever.

Causes of Disease. All the conditions that bear interest to life may undergo changed conditions, become causes of disease. Atmosphere, earth-causes - debatable ground. That is often taken for a cause, that is no cause at all.

We observe that a certain thing or circumstance or fact precedes other certain things, circumstances or facts, again & again, then we begin to say that these preceding facts are the causes of the subsequent facts. We may be wrong. When we observe that A always precedes B & B is never present unless preceded by A & B never follows unless preceded by A, then we will be justified in saying that A is the cause of B.

Take typhoid fever: One set of physicians say it is not contagious; another set say it is contagious. One set are so situated as to see facts that led them to believe it contagious - after long inquiry & series of observations, it came to be believed that it was contagious. A & Jenner's observations & the results.

When you shall have observed one person having measles & then many in community - you observe this 1,000 times. Then you say that that one case was the cause of the measles & that measles is contagious. Causes are eluding. Why should one

man have a tumor & another not? 100 persons are shipwrecked, subjected to same cold, exposure &c. - One man has catarrhal fever another rheumatism another, inflammation of the stomach &c. So may escape without any disease. Why? we do not know we say there is a predisposition. That is simply putting one thing for another.

Causes exist & produce definite effects. Take the air. If cut off from it we die of apnoea or asphyxia.

The air is full of disease producing agencies; It is too hot, cold, dry or wet. Hydrometric - barometric conditions not right. High mountains, valleys weather, winds become disease producing agencies.

Cachexia & Dyscrasia. imply a more or less permanent condition.

Diathesis implies a more or less transient condition. Cachexia - acquired or hereditary.

Tubercular - Scrofulous - Cancerous - Syphilitic Malarial.

Tubercular Dyscrasia. Found in meninges of brain, (base preferably) joints, lungs, mucous membrane, in fact any tissue. Size. From almost microscopic to size of millet seed, masses coalesce & get as large as an egg.

Yellow tubercle. inflammatory products which undergo caseous degeneration & it is in that condition that there is danger of Scrofula. The inflammatory products fail to organize. (cells lose water). Put tubercle under microscope - cell similar to lymph cell - protoplasm larger round or irregular cells with nuclei & in center is giant cell. Tubercle first laid down about the lymph vessels in contact with minute arterioles.

The arterioles are compressed & the blood squeezed out by a mechanical process & there is lack of nutrition because of failure of circulation in the arterioles.

Gray tubercle inimical to life. In low lands tuberculosis is at its maximum. It is due to atmospheric vicissitudes. Not in Arctic, rare in Norway, decreased also in the South. cold damp winds favor it. In New England states, large

Percentage. Due to bacilli.

Serofulous diathesis more often cachexia. (Seroto a ser.) Liable to inflammations, especially of lymphatic glands, mucous membranes, joints, bones, periosteum. No tendency to resolution, reorganization or reabsorption.

Tendency to cheesy degeneration (acquired or hereditary) caused by insufficient food or clothing or exposure, Deprivation of any kind causes it. Blue finger, Prurient abdomen, (due to enlargement of lymphatics) enlarged submaxillary or cervical glands. &c

Intimately associated with tuberculosis. Dr Niemeyer taught that the danger of cheesy degeneration was the liability of its terminating in tuberculosis.

Cancerous Cachexia. Some say it must be inherited; others that it is due to some local lesion of circulation.

Malarial Cachexia. Due to circulation in the blood of malarial bacteria. It is a low micro-organism found constantly in the blood whenever the malarial cachexia exists. Low damp soils favor it; miasma. First impression on brain & spinal cord, as a result every cell in the body is affected.

Syphilitic Cachexia. Inherited & acquired. Syphilitic eruption - syphilis. Copper colored spots. Throat affections. Syphilitic fibroma, smaller & more compact than other fibroid tumors, gummy affections of bone. Very often suspect syphilitic dyscrasia verify diagnosis by treatment. If you suspect syphilitic tumor of brain or there are eruptions on the skin, give mercurials & Iodides & result will prove.

Etiology. - Causes of disease.

Causes may ~~may~~ be - Remote.

Proximate.

Predisposing within the body.

Exciting.

A predisposing cause is intrinsic. Operates from

within. It makes a person more than ordinarily liable to all or some particular forms of disease. Child of consumptive Parents inherits phthisical constitution. That is predisposing cause. - Other causes would not ~~produce~~ disease of the lungs, but for the fact that the Predisposition existed. All causes would not produce the disease in one who had no predisposition to it.

Predisposing causes are important, - may or may not exist. Exciting causes are those causes which act immediately at the moment to excite the disease. - Proximate cause. The predisposition is the remote cause.

Causes may be Extrinsic - Intrinsic. Causes may fall within one or more of these definitions. Predisposing is intrinsic. Brights disease; uraemic intoxication; by intrinsic operation of collection in blood of excess of urea, or products of tissue waste, jaundice of hepatogenous origin - intrinsic.

Extrinsic causes operate from without. Application of cold, heat, exposure to all disease producing agencies outside of body. Class large.

Causes may be Primary or Specific. Specific poison as in Syphilis. Nothing but Syphilis could produce Syphilis. Specific causes are divided into classes, but all specific causes do not fall in that class. Miasma specific cause of whole miasmatic group. Virus implies that the cause is particular. Vaccine virus produces phenomena of disease. Virus has its own specific quality with a germ which is capable of being separated from anything else.

Vermin - venomous insects. Contagious - venoms are not contagious, they are specific. Each poison of a disease has its own particular characteristics.

Contagious disease is produced by the circulation & propagation in the blood of a particular form of bacteria.

Disease produced by atmospheric vicissitudes, hygrometric, barometric, thermometric conditions are important. Sudden changes of temperature produce disease, especially

of respiratory organs, lungs, trachea, bronchi.
 - New England States = Maximum of cold, with rapid changes of temperature, dampness. You have maximum of Consumption in U.S. Intense cold may be borne with impunity, as also intense heat, - 50° - 60° below zero - Arctic explorers. If wind did not blow no harm would come. We could breathe 70° F below zero for a short time if it were not for the wind. 113° above boiling point i.e., 325° F has been borne for several minutes without bad results. Experiments in France, years ago.

Insect in field grain - Peasant girl went in over where they put the grain to see what the thermometer registered. It was above boiling point of water. Perspiration prevented suffering - it was a safety valve.

Disease will be produced by cold in proportion to permanency of that cold. "A green Christmas makes a fat churchyard" is not true. Dry cold weather is not healthy weather. Our healthy winters are our moderate winters. Cold winters are sickly.

As the mercury goes down, in that proportion does the death rate increase. Goose flesh - blood reaches internal organs in excess. First step towards inflammation.

During the heated term we have diseases of stomach & bowels &c. Cholera infantum - 80° F & up.

Day & night. As it goes up, in that proportion does cholera infantum rage. Glandular organs

suffer from heat, liver especially - East Indies - hypertrophied liver from heat. A specific disease produced by sun is sunstroke. Coup-de-soleil.

Heat apoplexy - Blood 104° - 112° . - 112° marks extreme temperature of blood. Myosine of muscles is coagulated & the patient drops. Exclude contagious diseases which can be produced only by specific poisons & you cannot tell what produces diseases. Exclude all the diseases in which the germ theory might be set up & we still

have a very large group in which the causes are very uncertain. Dr. Hosi attended a child & told its symptoms. It was perfectly well during the day, learned her lessons (after eating a hearty dinner) then recited them & ran out to play. (vigorous.) At night he was called to the child who was taken sick by being at first nauseated. Eyes seemed to start & see nothing. When asked to put out her tongue, she opened her mouth showing partial consciousness. A twitching began on right side of mouth which soon extended down ~~on~~ one side - arm was thrown out - she went into convulsions, one after another in rapid succession. There must be one of 3 things the matter with her.

1. Congestion of brain, functional or reflex action.

2. Uraemic intoxication.

3. Rupture of cerebral vessels.

Exclude Uraemic intoxication because for weeks & months there had been no trouble with the urine, so it must be first. Exclude the last because rare in a child, rare under 50 years. Treatment. Ordinary - at first, no effect. Chloroform - $\frac{1}{2}$ gr of Morphine & atropine $\frac{1}{50}$ gr. - Chloroform 11 times.

Symptoms. From Greek word meaning those events which occur concurrently with others &c. Those things occurring in body of sick which are appreciated by patient or physician & which aid us to know character, location &c of disease, the method & duration & operation of the disease, its termination & therapeutic indications. **Diagnosis & Prognosis.**

False diagnosis leads to many errors. Prognosis very important. Symptoms fall into 3 groups.

1. Expression of some lesion of sensation.

2. Disordered or interrupted, or obstructed function of an organ.

3. Changes of structure.

In 1st are Pain. Quality, kind, location, dull, aching, sharp, intense, acute, shooting, dead, burning, darting, tearing. All symptoms felt by patient & not appreciated

by physician are Subjective. Those that are apparent, appreciated, or seen by the Dr are Objective. Physician discusses relation of structural causes which the Dr is able to determine either aided or unaided by instruments. Signs & symptoms are only synonymous when physician can use them interchangeably.

Crackling sound or ~~rattle~~ is heard in inflammation of lungs & only then. Cause does not always exist when pain is felt. Decayed tooth - neuralgia of the head.

Psoriasis - Pain in knee. Some symptoms are very important & some are trivial. Nausea & vomiting are important in guiding correct diagnosis.

Nausea does not always mean disease of stomach. It may be symptom of disease of brain - an occasional vertigo means indigestion, dyspepsia &c., but habitual vertigo & pain in ears - something may be wrong with the semicircular canal on that side, or it may mean something wrong with the medulla.

Hyperaesthesia Excessive pain. Hypoaesthesia No pain.

Impaired special sense has its own special symptoms.

Muffled hearing has not half significance that exalted hearing has in typhoid fever. Opposite things may mean the same thing. Strabismus may mean

functional disturbance or disease of brain. Impaired taste & smell may indicate disease. Yellow tongue indicates malaria.

Tongue & Pulse are always objective symptoms. Lard red, black, pointed tongue is bad. Average pulse, Male 76.

Female 80. 120 pulse not particularly dangerous but 140-150 is. Difference between quick & frequent pulse - both may be of same frequency but when it is quick it escapes fast & indicates irritable heart.

Full pulse - arteries filled. Irregular pulse - if pulse has always been regular, is always a bad sign. Dicrotic pulse at termination of grave forms of disease; it is a wavy breaking up pulse. Very dangerous.

Rigoretic - Artery conveys sensation of double pulsation.

Weak pulse - Small pulse - Thread pulse.

Delirium. It is not simply that garrulous talk that accompanies fever. The moment some persons have exalted temperature, they begin to talk. It is not that. Rouse patient & get his attention & at once the condition passes away. That condition has no significance.

Delirium is associated with low grade of fevers; typhoid fever, pneumonia & with all forms of disease of the brain & its meninges. Patient is incapable of reasoning & it is impossible to fix his attention.

Coma-vigil - Patient is constantly muttering. His brain is constantly at work at all sorts of brain images, but he gets no real sleep.

Coma. Patient lies comparatively unconscious, or else unconscious. There are degrees in coma. That condition comes from overdoses of narcotics. It is always a significant symptom. But the half awake condition between vigilance & coma - coma-vigil. In that, if you fix his attention for a moment, he relapses again & he lies in that condition. It is a very grave symptom. It implies that there is brain lesion of the nervous system. Brain is implicated. There are different forms of delirium; in one case you see a wild demonstrative delirium. The patient will hardly be restrained at all, or only by actual physical force. Again you see the forms which are associated with coma, a low muttering delirium. He lies with his eyes half open & is constantly muttering to himself & with that condition of delirium are apt to be associated 2 or 3 other symptoms which also have great significance as, twitching of the tendons of the wrist - tendons of the flexor muscles. The patient with his eyes closed is constantly picking at the bedclothes or reaching in the air after imaginary objects. He picks up the clothes as though searching for something.

It is always associated with low forms of fever & is a very grave symptom. Another symptom is

Position of Patient's body: dorsal decubitus.

Patient cannot lie in any position except on his back. This is because of the relaxation of the muscles of the body. That is always a bad sign. It shows extreme muscular weakness.

There is another condition associated with this - a constant tendency of the Patient to slip towards the foot of the bed. His head lies on the pillow - lift him up in a few minutes he slides down again towards the foot of the bed for the same reason that he lies on his back. The moment he ceases to be aided by any physical force or mechanical appliance his body sinks towards that position.

Pneumonia. Quality & quantity of matter expectorated important. There is a *pathognomonic* symptom which is very rare, that is, it is rare that a case points beyond all dispute to a given condition. One of them is the character of sputa in pneumonia. Take a case of crepuscular pneumonia after 24 or 36 hours. When patient coughs & expectorates you find a peculiar kind of sputa, but its color is characteristic. It is of the color of brick dust. It is a close mechanical mixture of the blood with the sputa which gives it that rusty color. It is *pathognomonic* of pneumonia.

Quantity: When the mucous membranes are inflamed when you have bronchitis, the sputa is nearly always diffuse. When mucous membrane begins to heal itself, you get sputa like white of egg & which at once gives you the fact that there is involvement of the parenchyma of the lungs. The existence of pus in connection with mucus - Mucopus - will tell you that there is such condition in the parenchyma of the lungs, or in the bronchial tubes or both. That cannot pass away immediately. The presence of a quantity of sputa has its significance.

Typhoid Fever. Epistaxis is a very important

symptom. Outset of typhoid fever that is the fever that is the fever has not as yet made its mark upon the patient so that you can say beyond all dispute that your patient has typhoid fever & no other form.

But if there be a given number of factors which would indicate the existence of typhoid fever & certain others that indicate remittent malarial fever, then the existence of nose bleed would determine you in favor of the diagnosis of typhoid fever because it is often accompanied by Epistaxis. The quality of the respiration often gives important information. You watch your patient & though he may not seem to suffer from dyspnoea, but if you watch him you will see he is breathing rapidly all the time & talks with difficulty. Yet he will tell you he has no sense of short breathing. You must depend on the results of your own observation. You can observe that the respiration is shallow. One of the best ways to do that, if the patient is able to sit up in bed,

Grasp both his hands, standing behind him, put palms of hands over lobes of both lungs & you will see that there is no expansion of the lungs & respiration is shallow because there is no movement at base of lungs. Seen as well as felt. There is a form of respiration known as the Cheyne-Stokes, -rare form - very peculiar. It commences with a deep inspiration which gets a little deeper & a little deeper at each inspiration until the maximum is reached when the reverse takes place.

It goes down the same grade, a little less & a little less by regular rhythmical movements till the patient ^{doesn't} seem to breathe at all. Then the movements begin again & so on. That condition is ordinarily seen in diseased condition of the brain or after injuries to the brain or its meninges.

Scrofulous Condition. It is a condition very closely or intimately associated with tuberculosis, &

it is so closely associated with the tubercular diathesis that very many of the subjects of scrofula go straight on into the tubercular diathesis if indeed the scrofulous diathesis be not the tubercular diathesis. It is a diathesis of habit of body either acquired or inherited in which there is a strong tendency to a certain form of inflammation which is known as the scrofulous inflammation.

There is a strong tendency upon injury or exposure, to a low grade of fever of a peculiar kind which may attack the lymphatic glands, the bones or coverings of the bones or almost any tissue or organ if the diathesis be very strongly marked. The best illustration is found in children & for the most part blondes — children with a clear beautiful, diaphanous smooth skin. In such children you will observe often that the eyelids are somewhat inflamed, the glands are inflamed so that at night the two eyelids adhere. Look at the structure of the cervical glands or submaxillary glands or almost any of the glands of the whole lymphatic system, you find them inflamed, that strong tendency to disease or inflammation of that character or quality, which at once pronounces that the child does differ from ordinary children. In some cases the child seems to escape from the diathesis as it grows up. If the diathesis exist in the extreme you often see large protuberant bellies because of the condition of the glands of the mesentery. The glands about the neck are inflamed & discharge pus. You see the peculiar inflamed eye. The scrofulous diathesis will leap into the tubercular diathesis & lead to the destruction of the child by tuberculosis. All physicians observe that the two conditions are closely connected. That being an important fact it is your duty as physician, knowing beforehand that a child or adult is scrofulous, to check it as you often can. The way to do that is when the child has been exposed to bad hygienic

conditions, to place it in good ones. Scrofula of a certain form, is largely connected with squalor, want, lack of food, light &c., yet it is not only among the poor. The palaces of the rich have it also.

Having determined that there is inflammation of the covering of a bone, put patient in best hygienic conditions; then give cod liver oil which is almost the specific. Give Iodine also. Take Scrofulous inflammation of the periosteum of the shin bone: child of scrofulous type. It extends by continuity. Give nutrients & Syrup. Ferri. Iod. grs V - XV. At the same time give Cod liver oil in some of its preparations.

Modes of Dying. If you know your patient has a tendency to death in a given way, then you may be able to counteract that tendency & save the patient's life. Suppose you knew your patient was dying of weak heart as an expression of a low lingering form of fever, due to the circulation of some poison in the blood, typhoid fever, or small pox. Suppose he is dying from asthenia - want of strength - you know that the heart has not power to force a current of blood up against the force of gravity, with the patient's head high up on the pillow & knowing that the brain is being starved for the want of blood that does not exist in the body. Simply take away the pillows so that the blood may reach the brain & you have saved your patient's life. One man dies quickly, suddenly - he goes out of life with apparent health. Another man goes out of life so slowly & uncertainly that you cannot say when he ceased to breathe. How is it? In disease, one man's intellect is gone for days. He does not recognize his surroundings.

Practically he is dead to life & its forces. Another retains his intellect to the last breath.

There cannot be the same condition in these 2 cases. Just so long as the blood circulates, just so long life is.

Stop the circulation of the blood & then death comes. Now then may the circulation of the blood be stopped? Look at the circulation of the heart & all the blood vessels. Hydraulic apparatus. The lungs are a pneumatic apparatus a series of tubes. The object of the right heart alone is to circulate the blood through the lungs. When the right heart has done that it has done all that it is expected to do. If that stops, death ensues. The whole apparatus of the lungs is to subject the blood in the lungs to the contact with the oxygen of the air or to change venous to arterial blood. The interdependence of the heart & lungs is so close & intimate that you can't interfere with one without interfering with the other. Interfere with the pulse & you interfere with the heart. Take a case when a man bleeds to death. He dies from anaemia, all the blood is drained out of his body, so that the circulation of the blood can no longer go on. In order to the circulation of the blood, two things must exist;

- 1st The heart must be able to contract & send the blood along.
- 2nd There must be blood in the heart to send along.

A man bleeds to death. Examine the heart. It is contracted, proving that it has power to contract but there was no blood there to send. That is proof again that the heart was able to contract but has no blood, when you practice transfusion. Let him bleed almost to death, then take blood from some other arm & pump it into his arm, & the heart begins to beat again & he recovers. Take death when there is plenty of blood but there is some disease of the brain. Coma exists. It may be cerebral apoplexy. Patient is unconscious. His heart beats slowly though strongly. The blood goes on & on in the brain until by & by the respiratory center is crushed out & the heart stops beating because there is trouble at the base of the brain. The heart is found full of blood because its beats are inhibited & it does not get its nervous supply.

Death may begin at the lungs by taking away the air from lungs. Two conditions to breathing.

1. You must have lungs.

2. You must have air.

Suppose you fall into the water or smother, you die from ~~apnoea~~ without air (better word than asphyxia without pulse). The air is suddenly cut off from your lungs. The heart keeps on beating, the blood goes to the lungs but after awhile, since you do not breathe since the venous blood is not converted into arterial blood, the dark fluid begins to get around to the left side & the heart sends venous blood all through the arteries. That is, the arteries carry venous blood.

You are being smothered. It doesn't matter whether you are being hanged or whether in a tank of water you die because the arteries are circulating venous blood. By & by that venous blood goes to the brain. The brain is starved, because it does not get arterial blood.

Death by coma. Death begins in the lung.

Another way in which death may begin in the lung. It is attended by almost precisely the same symptoms as death by apnoea. A large detachment plugs the pulmonary artery. It is plugged completely & patient feels just as if the air was cut off. There is intense dyspnoea. You get the air into the lungs, but the blood is cut off so that it doesn't go through ~~the~~ lungs & not being aerated, it produces the same sense of want of breath as in apnoea.

The same set of conditions occurs again. No blood reaches the lungs. By & by you see the patient's eyes start from their sockets, the skin becomes cyanosed, veins stand out like cords, hands legs & feet are blue because the blood is dammed back & by & by he dies for want of breath. He dies because the venous blood is circulated in the brain.

Three vital organs brain, lungs, heart.

Death in heart in 2 ways

1. Asthenia - lack of strength

2. Sudden interruptions in heart's movements. The blood must be in the heart - the heart must be able to beat.

Death from anaemia - hemorrhages, dilated pupils, weak respiration, cold clammy sweat, convulsions - death. After death - heart contracted but no blood in it.

When functions of brain are interrupted from blow injury, disease, so that the heart no longer gets its proper innervation, then circulation fails because the disease begins in the brain.

Man thrown from a wagon - injured - heart stops beating because of injury to pneumogastric centre which lies in the floor of the fourth ventricle.

When the whole body is circulating bad blood as in small pox, a great many die in a profoundly comatose condition, because the brain fails to manufacture the vis-nervosa to carry on the machine. The nervous system is the engineer which lets on & shuts off the steam.

You would not treat a patient dying from coma, as you would one dying from want of strength.

Typhoid fever. Patient dying - anatomical lesion in small intestines - blood poisoned - heart weak. Patient sleepy - comatose - almost pulseless at wrist. Lower the head. Death by anaemia - lay patient down & there won't be that tendency to syncope. Faint induced by drain of blood from brain.

In asthenia, stimulate heart. Keep heart beating until time is allowed for the elimination of the poison.

Typhoid fever, pneumonia, small-pox, measles & diphtheria are self-eliminating.

Special Pathology. Systems of Organs - Begin with Brain. Diseases of the Meninges of the Brain. The anatomy of the brain & cord ten years ago & today, very different. Read about cerebrum & its divisions into lobes &c. understand the relation of the dark cortical substance

to the inner white substance. The cortex of the brain lodges both centers for common sensation, as well as for centers of motion.

The anatomist of ten years ago taught that there were 3 coverings to the brain.

1. Dura mater. Internal lining of skull - dense fibrous - 2 layers.

2. Arachnoid. Middle membrane - serous shut sac with arachnoid space.

3. Pia Mater - 3 layers. The internal layer closely invests the brain but the external membrane dips down into the convolutions or rather the spaces between the convolutions. It is a duplicate layer. The spaces or fissures of the inner layer are called the meshes of the pia mater - still true.

The anatomist of today teaches that there is no such membrane as the arachnoid, but what has been so called is simply the covering of the internal dura mater with pavement epithelium & that the outer layer of the pia mater constitutes the so called visceral layer of the arachnoid.

Sub dural space - It used to be the external layer of the arachnoid. It is a layer of pavement epithelium which is separable from the internal side of the dura & when that is separated it was thought to be the external layer of the arachnoid. The space that lies between the pavement epithelium & the dura when the two are separated - Sub-dural.

Pachymeningitis - Inflammation of Dura.

Acute or 1 External - adherent to bones - old age.

Chronic 1 Internal - covered by pavement epithelium.

External - It concerns surgeon more than physician for it is rarely caused except by some traumatic trouble as a blow on skull - injury of scalp - erysipelas - necrosis or caries of bone. Other causes:

Creeping in of inflammation by continuity from internal ear or disorder of mastoid cell.

Suppuration always attends external Pachymeningitis.

Symptoms. Not characteristic. Can't say positively by symptoms alone what the disease is. The surrounding circumstances must determine. A man gets a blow on the head. A child has inflammation of internal ear. By & by they become sleepy, stupid, dull intellectually, inappreciative of surroundings; Pupils contract - bowels are constipated - constant headache diffused over top of head - vomiting - difficult movements of muscles of body so that you are perfectly sure there is something wrong about the brain - furred tongue - high temperature 105-6 in some cases, in others only a slight rise. With those symptoms if you knew of the blow on the head, you would say - External Pachymeningitis. Also if you knew of inflammation of ear of child - the same.

See what is going on in the brain. In the child, pus will point to abscess, particularly if child is young. In adult you may be sure that in some cases there is separation of dura from skull by existence of an abscess in some cases you can't tell. If you could determine the point at which the abscess existed, you could trephine & relieve from compression. Sometimes disease of scalp takes place as well. The blood vessels pass between scalp & diploe & dura. If one is inflamed the others are apt to be. When there is disease of the scalp, that points out exactly where the membrane is diseased & the point at which the abscess exists. Cut through scalp, make crucial incision. Throw back flaps, expose skull bone diseased. Put on trephine. It exposes abscess due to inflammation of the membrane itself. If there be no abscess & the membrane is thickened & more adherent to the bone than in health - bones dense in structure - Pachymeningitis external. Scrofulous children are apt to have it. The symptoms above all belong to the first stage. By & by the patient becomes profoundly comatose - complete hemiplegia or not. If so, it results from compression. Dilated pupil, relaxation of sphincters - urine dribbles away. 2 Stages.

1. Excitement

2. Depression or Collapse.

In the first stage there are all the symptoms of irritation & inflammation, but when inflammatory products, not or large abscess is formed & compression results, then the second stage comes on; the pulse is slow respiratory movements slow.

Before death Pupil may dilate or alternately dilate & contract or one dilates & the other contracts, intimations of lesion of motility; strabismus (depends on amount of compression) action of heart quick & fluttering death.

Internal or Haematoma. Acute or Chronic (A clot of blood lodged in a tissue or organ is haematoma.) Hemorrhagic Pachymeningitis. Symptoms same as for external, - not characteristic. Impossible in many cases to make diagnosis before death. You can say there is something wrong in the brain. You won't know whether it is in the base or elsewhere - whether external or within the brain. - False membrane forms in sacs.

Causes - blow, injury.

Concerns aged people for most part & persons who suffer from some dyscrasia; subjects of chronic alcoholism, chronic rheumatism or both together or sensory. While it may attack a child & does, now & then, it concerns those from 50 to 70 years old, particularly those with bad habits. At the very outset a membrane forms very thin looks like a stain; is of a brownish or yellowish brown color - handle it carefully. Embryonic connective tissue, capillaries, vessels large. Capillaries large but thin-walled & walls fragile. The steps are:

1st Hyperaemic condition of internal surface of membrane.

2nd Inflammatory Processes.

3rd Formation of gelatinous brownish thin membrane - connective tissue.

4th Layer upon layer of this - the older the membrane the thicker it is.

5th Large capillaries with large calibre, break.

6th Blood flows out & you have

7th Haematoma, or blood clots.

Tubules connect walls of sacs. Lie in stroma of embryonic connective tissue.

When these membranes form layer upon layer, the whole mass takes upon itself the form of a cyst, & so it used to be called a cyst. This cyst contains blood clots or haematomas & if old, masses of fibrine are found in connection with the blood clots which are projected from the internal wall of this cyst & which give it its peculiar character - ragged, jagged masses of fibrine.

Two Stages 1 Excitement 2 Collapse

Curious fact Often there is complete remission of symptoms. Symptoms of 1st Stage - Contracted pupils - immovable pupils - Persistent headache, Constipation. Flushed face. Intolerance of light - pupils respond slowly to light. Intolerance of noise - Paralysis from compression. This stage may last a few days or several weeks or a year or more.

Symptoms of 2nd Stage. Lesions of muscles - motor lesions, & lack of power to control. Chronic contraction of muscles - flexors. Arm & leg held in same position for several days. - Pupils dilated. Paralysis - hemiplegia or not. Comatose. Then becomes conscious, seems about to recover after a few days again in proportion to formation of blood clot all the symptoms recur. Patient becomes - Profoundly comatose - Pulse & respiration quicken towards death. Respiration 30-60 per minute.

Septic meningitis Acute - Chronic.

Inflammation of Pia mater & arachnoid. The visceral layer of the pia is connected closely with the surface of the brain because the blood vessels pass directly from the pia into the mass of the brain, therefore you wouldn't have inflammation of the pia without external inflammation of the brain itself. It must be distinguished from tubercular meningitis & is called Simple Meningitis. It affects children, as well as adults. 20-40 years.

It may become epidemic "Epidemic Brain Fever".

Often doubt as to what the disease is, especially if patient gets well. Symptoms - Stage of invasion. Child, hitherto in good health, good nature, becomes

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fractious, cross, doesn't sleep well, cries out at night, face flushed, afraid of light, has headache, diffuse, front or back, constipated, urine scant & high colored, eyes injected, pupils contracted, nausea & vomiting, excitement. That passes off into the fully developed stage with perhaps a convulsion (Convulsions not frequent in adults). When pia is fully inflamed - Intolerance of light & noise, high temperature - quick pulse - intense headache - Nausea & vomiting - suffused eyes - flushed face - constipation - restlessness - head bowed into pillow - hyperaesthesia - muscular contraction - twitching of muscles, wild delirium - throbbing carotids & temples - *timitus aurium*.

Stages 1st Invasion 2nd Excitement 3rd Collapse.
Contracted pupils as a rule mean irritation of brain.
Dilated - compression.

The child or adult becomes unconscious or partially so & as the inflammatory products compress the brain the case passes into the 3rd stage. The 2nd stage lasts only a few hours or 2 or 3 days. The history of the whole case is about a week, sometimes 2-3 weeks.

3rd Stage Dilated pupils or one dilated & one contracted Strabismus & Ptosis (due to compression) - sometimes in excited stage - slower action of heart & respiration - Orquell-Robertson pupil - changes ash center which controls, but no response to light - Toward close - Profound coma - relaxation of sphincters - convulsions - Paralysis or hemiplegia - tonic contraction of muscles - flexors & death. Inflammatory products: Serum, pus coloring from diapedesis.

The symptoms are determined by what is going on in the brain. What is going on in the brain? At the outset the pia was hyperaemic & because of its close connection with the superficial brain, the brain itself was superficially involved in the inflammatory processes but as the inflammation goes on & on we get the resulting inflammatory products & the spaces in which

the blood vessels lie, are filled with a fluid which closely resembles the serum of the blood & yet it contains as a rule only a trace, if any, of albumen & its specific gravity is greater. These spaces are filled with this transudation & the transudation is laden with white blood discs in greater or lesser number, so that these spaces are filled with a creamy kind of liquid. After death it is difficult to separate this from pus. The meshes of the pia also contain this same quality of fluid & the fluid there is deeper - it puts on a peculiar yellowish appearance & is to all intents & purposes after death - pus. It was at the outset simply the changed serum of the blood with white blood discs. In some cases, that layer of the pia which invests the brain substance proper has deposited on it a simple pellicle of pus. Dr. Hood said he had taken scalpel & scraped off from the whole pia, a layer of pure pus. Something else is going on: The pressure of the transudation in the perivascular canals leads to the displacement of the cerebrospinal fluid & the exudation finds its way from the convexity of the brain to its base so that the fluids contained in the ventricles, if so great as to much distend the ventricles, cause compression of the outlying brain substance & the convolutions are flattened against the internal substance of the brain itself. Overfulness of the vessels themselves - **Hyperaemia** - Condition of larger vessels leads to anaemic condition of brain - Paradox! True. Overfulness of larger vessels & transudation in vascular spaces & in meshes of pia & in ventricles brain substance compressed. Mechanical compression of capillaries squeeze blood out of them & there would be anaemia of the capillaries while the larger blood vessels would be overfilled. In all forms of meningitis as soon as the inflammatory products begin to produce compression, the stage of excitement passes away & the stage of depression comes on, & again we have the

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same set of phenomena: 1st Stage. Temperature high 104 - quick pulse suffused eyes intense headache - convulsive movements tonic contraction of flexors. 2nd Stage Heart slowed, action lessened temperature depressed (sometimes not) - Breathing less frequent - comatose. Last Stage: before death. Convulsions - relaxation of sphincters. Pulse quick & irregular - pupils dilated. Some die in convulsions.

Consider history of case in making diagnosis, simple meningitis relates comparatively to youth. It may result from a blow, direct exposure to sun's rays - no particular cause. - No diathesis - no chronic alcoholism no scrofulous taint. You might hesitate a long time between tubercular & simple. The former has scrofulous taint.

Treatment (No convulsions.)

Stages Invasion & Excitement - Potass Bromide. Prop patients head up. - Leeches - wet cups - revulsion back of neck - Morphine & atropine - Ice bags - Cathartics - Calomel gr ii - iii Rhubarb or Jalap. Castor Oil. - Correct dyspepsia.

Rx Tinct. Aconiti rad. } Every 2 hours - Controls
Tinct. Opii deodorata aa gtt ii } & modifies excitement.

This stage lasts 48-72 hrs. - wide latitude.

Stage of depression - (Less ice bags, aconite &c.)

Potass. iod. or Lugol's solution qtt vi every 3 or 4 hours. Food - Beef tea (per rectum, you can't feed by mouth), animal broths &c. Tinct. Gelsemium qtt ii every 2 or 3 hours controls delirium. Bromides of K or Na combined with Chloral Hydrate aa gr xv - xx to be repeated in 2 hours if necessary. The therapeutic object is to act on the vaso motor center & decrease the quantity of blood circulating through the brain.

Tubercular Meningitis Largely a disease of childhood. It is associated almost exclusively with the scrofulous diathesis. It affects children from 2 to 6 years old, yet it may affect any adult of any age & 20 to 30 years most frequently. Associated in adults

with tuberculosis. Scrophula may be acquired - inherited generally. It is found in association with other diatheses - syphilitic cachexia - any blood taint. Children of Parents who have blood taint are more likely to have it. Whatever impairs health, other things being equal, leads to tuberculosis & therefore any cachexia will lead to this condition.

Tubercular bacillus in brain. The inflammation in tubercular meningitis is due to the deposit upon the surface of the pia, of miliary tubercles.

2 Conditions 1. Inflammation 2. Tuberculosis

While there are many primary cases, most of them are secondary - Scrophulous children, bad hygienic conditions. Secondary cases common with adults, that is to say, it is a part of general tuberculosis.

Tuberculosis affects Lungs - Joints &c - pia.

Intensity of inflammation, does not depend on the amount of deposit. Passive tuberculosis: - deposit at base of brain, not at convexity. But the convexity seldom wholly escapes. It is deposited in particles barely perceptible to naked eye; by aggregation of numbers of tubercles (granular) you get masses as large as a pea.

It is not universally scattered over the pia. In some cases it is distributed, with sound areas between. In some cases again, it is almost universally dusted over the pia. But particularly the line of the arteries is followed by thick deposits. Take a scrophulous child with a strong hereditary predisposition to tuberculosis. There is always a prodromic stage, which relates largely to the diathesis itself. The absolute outbreak of inflammation of the pia is preceded (it may be several weeks) by a history of general bad health which points to the predisposition to disease. It is due to the diathesis & the Patient from being playful, bright, cheerful & well becomes seavish, fretful, doesn't sleep well, grinds its teeth. During the day it may resume its to go & play in seeming good health; but every now & then it will

show evidences of pain; you then have a Prodromic Stage varying 1-2-3 weeks, sometimes longer.

The deposit having been so great, inflammation of the pia occurs & then you have the 1st Stage & the disease itself.

Characteristics: Intense headache - contracted pupils - constipation - nausea & vomiting & after 2 or 3 days High temperature 103-104. In young child Anterior fontanelle pushed up, bulged - (depressed - anaemic) face flushed - eyes suffused - peculiar kind of cry - meningitic cry - throws hands over head. After a few days: Lesion of motility & sensation - coated tongue - delirium alternates with quiet sleep.

Look at the hands & you will notice that one of the thumbs or both are thrown into the palm of the hand. Try to lift it up & you find that the muscles hold it down. You have flexed toes or fingers, lesions of motility. These lesions are numberless. Universal convulsions are followed by a profoundly comatose condition for a few hours. Instead of convulsions you will have more or less tonic contractions of the muscles of the arms, legs or both. Very commonly the muscles of the back contract & the head is thrown back & bores itself into the pillow.

2nd Stage Depression. Convulsions alternate with tonic contraction of muscles - hyperaesthesia - Comatose - sighing respiration or Cheyne.

3rd Stage Collapse. Profound coma - relaxation of sphincters &c - rapid, thready, irregular pulse - increased action of heart, also respiration 50-60 per minute.

Child dies from inhibition of the heart by compression of the brain acting through the pneumogastric nerve.

Added to the original disease, tuberculosis of the lungs, are all the symptoms of the trouble with the brain.

Treatment Children of scrofulous parentage treat scrofulous diathesis. Bowels should be watched so as to guard against constipation or diarrhoea (cathartic). Nutrient food - Pepsin - Cod liver oil - Rigid hygienic conditions.

Prop up shoulders -

1st Stage. You can't get rid of the tubercles -
Use leeches, warm poultice, afterward. Wet cups -
scarify & take out blood. Ice bags or cloths constantly
Bromides, Chloral. Mustard to feet. Tinctura
Acouiti qtt II with Tinctura Opii Acoderata qtt V
Old Physicians used Calomel. Acts 1st on absorbents
& takes up inflammatory products. 2nd Alterative.
Not used now. There is a transitional period.

2nd Stage Object of treatment - removal of compression
of brain produced by inflammatory processes.

Lugol's Solution. Support patient. Some times
there seems to be an abortive process & the patient gets well.
Rare. "I have never seen a case, in which I believed
the diagnosis to be correct, recover." Cases of simple
meningitis sometimes recover, but the child is left
with Paralysis &c. atrophy of arm or leg remains
always. — Idiotic.

Encephalitis - Acute. Abscess of brain. It is
not a diffused inflammation. It is a local inflam-
matory condition, suppurative in character, that is
to say, points here & there in the brain undergo inflam-
mation, abscess forms & you have all the phenomena
due to abscess. It is difficult to diagnose. It is not
a primary affection, it is always secondary & because
it is, you will get a secondary clue to its cause. It is
believed that the first step is hyperaemia of the
vessels & that passes off into inflammatory processes.
& by & by they result in the ~~trans~~^{extr}udation of the serum
of the blood; fibrine, albumen - then migration of
white blood discs & then by diapedesis, the mass
becomes colored by the red blood cells & you have all
the facts of an abscess & it is called "Red softening of the
brain". It may be at only two or three places, or at
many. The abscess is disposed of in three ways: -

1. Metamorphosis. 2. Absorption - degeneration. 3. Calcification
Symptoms - depend on locality of the abscess.

(Case which Dr. Hood had.)

Disease always secondary. Syphilis - disease of nares & frontal sinus - then of brain. - Delirium - motor & sensory lesions - pupils at first contracted & then dilated - muscles contracted - loss of appetite - flushed face - obstinate constipation - vomiting - nausea.

Same set of symptoms through all these lesions of brain.

No traumatism - Case passed into 2nd stage which is characteristic of abscesses of brain. It was a silent condition. He would not talk. He would go to bed & get up when he pleased. Intellect dull. Obstinate condition. When he would talk he had perfect control of language.

Man died - I had abscess of brain. If you know the physiological anatomy of the brain, you can locate the disease & tell what it is.

Same treatment for all - Bromides - Support patient - Dr. Reyburn saw in London, two men who had recovered.

Pachymeningitis Spinalis. The spinal cord has its dura & pia. It has very much the same diseased conditions as the brain. Inflammation of the dura is Pachymeningitis Spinalis. The dura is intimately connected with the vertebrae - less so as you pass downward. In inflammation of dura of spinal cord, you have the same circumstances as in the brain. Cause is almost every case is an injury, or some diseased condition of the bone - caries or necrosis of one of the vertebrae, or sometimes pus, formed from an abscess in the neighborhood of the cord - thro' intervertebral foramen, pus finds its way into the cavity of the spinal cord. We do not have haematoma of the cord in the same degree as in the brain; we have inflammation of the internal coat of dura but very rarely. It is the external surface of the dura that is involved for the most part & we have formation of pus, thickening of membrane & then those symptoms which are referable directly to inflammatory processes & conditions connected therewith. We have high temperature.

Diagnosis. Is it inflammation of the dura? Is it leptomeningitis? You must determine by the facts that

Produced the condition. You get the results of the injury
 At the point where it occurs, you have inflammatory
 processes, effusions & thickening of dura - formation of
 pus, or migration of white blood cells & formation of pus again.
 Then the symptoms would be determined by the extent of
 the dura involved in the inflammatory processes. If a
 considerable extent of the dura involved in the inflamma-
 tory process, then you would have pain extending all along
 that particular point & you would have lesions of sensation
 & motility - compression of cord & paresis of muscles of
 legs - compression of spinal nerves for whole length
 of inflammatory processes. It might cover two or three
 of the spinal vertebrae. This refers to traumatic lesions.
 If the upper part of the spinal cord were involved
 that part which gives origin to the nerves which supply
 the arms & respiratory muscles - difficult breathing.
 The patient dies in this way. That which is peculiar
 is this: the patient is interdicted from any motion
 on account of pain. In most cases the motions of
 muscles of trunk, legs, arms, if whole length of dura
 is involved, is interdicted by spasmodic condition of
 muscles. The muscles become rigid when you attempt
 to move. The point at which inflammatory processes
 were begun, feels as if a cord were tied around the
 body & you can determine the height at which inflam-
 matory processes occur because that point indicates the
highest point at which it is involved. Patient has
 pain, sense of cord around the body, hyperaesthesia, muscles
 rigid. Has he been hurt? Has he caries of one
 or more vertebrae? Has he necrosis? Yes. Then you
 know you have Parahymeningitis Spinalis. You must
 separate this from two or three things. One of the most
 puzzling things to separate this from is Tetanus. If there
 was no trismus (locked jaw) you would call it in-
 flammation of the dura. Suppose there was no trismus,
 & there is not always, even in tetanus, nor in inflammation
 of the dura, but it sometimes occurs in inflammation of pia.

In tetanus the head is bowed into the pillow from contraction of muscles of spine & legs - Opisthotonos. It occurs too in leptomeningitis. You would separate inflammation of dura from tetanus by the fact that in the former there is no trismus; in tetanus all the muscles are involved. As the inflammatory products compress the spinal cord, in that proportion will you have lesions of motility. The patient cannot walk. Examine body after death; the exudation is found where you would expect to find it - at the most decumbent point. The posterior part of spinal cord shows more exudation than the anterior. Place patient on side or face then that state of facts would not exist. Separate it from rheumatism that involves muscles of the back (Lumbago) Distinguish between muscular rheumatism & muscular neuralgia. There is pain upon movement - in inflammation of dura there is pain without movement. History of case. Examine urine - in rheumatism you find urates. No sense of cord around patient's body in rheumatism. No point at which the inflammation is arrested. If patient attempts to move, there is no involvement of the muscles of the legs in rheumatism while there is in inflammation of dura.

Leptomeningitis - Spinalis. Inflammation of pia. The inflammatory products fill the cavity. Those products are largely pus intermingled with serum & fibrin. That which is peculiar, is the fact that the water, the cerebro-spinal fluid, becomes not only purulent but flocculent. It is filled with flakes instead of being clear. How does it occur? As the result of injury of gunshot wound. It occurs also without any injury. It occurs precisely as in the brain. It may occur from punctured wounds. It rarely occurs except upon exposure to certain conditions other than trauma. It does occur as inflammation of dura from disease.

conditions of the bones, caries or necrosis of vertebrae, but for the most part, if the history of the case does not present any traumatic cause, you will find that the patient had been exposed to the action of cold. Fortunately it is rare. Soldiers are liable to it. Without any symptoms other than a sense of feeling badly. The soldier has a severe chill. When the chill reacts he has a high temperature, 104° - 106° - then he can't move. If he attempts it the muscles become rigid. The condition points at once to the spinal cord. The brain is clear, unless as in many cases, the membranes of the brain are involved from other causes & then you have cerebro spinal meningitis. He has also that sense of a tight band round the chest. From all these symptoms you know you have a case of spinal meningitis. It might affect all or part of the cord. If the whole length be involved, you have all the lesions of motility & sensation affecting the arms & legs equally. You have first inflammation, then compression. You have jerky, uncertain, hesitating respiration, sometimes Cheyne-Stokes respiration. The patient's head is bowed back into the pillow; the muscles draw the legs up. He may lie still until he moves or is moved & then the muscles become rigid. Constant pain & hyperaesthesia - rigid muscles - opisthotonus. Prognosis always bad. You have a set of symptoms referable to the inflammation itself. High temperature. Hyperaesthesia of skin. In proportion to inflammatory products thrown out, the cord is compressed. Compression also of roots of nerves - anterior & posterior columns. Then you have paresis. Patient would not be able to move his muscles at all, because nerves of spinal cord, parenchyma, are compressed. Nerves of motion are compressed - Paralysis. Patient dies from inhibition of the heart's movements especially if inflammation extends about respiratory centers & medulla. Treatment. 1 Leeches along spine & about anus.

2. Or flannel blanket wrung out of hot water $112^{\circ} - 120^{\circ}$

3. Ice bag.

The hot applications give the best results as far as the patient does. The back may be blistered. Apply Iodine in the following proportions as a counter irritant.

Iodine ʒij
Sulphuric Ether ʒi

In addition to this give Bromides - Chloral - Opium in all its forms. - Morphine hypodermatically.

When meninges of spine are involved. Hyoscyamine & opium combined to procure rest & quiet & overcome extreme irritability of spinal cord. The muscles often become rigid by some noise - the ringing of a bell, the gurgling of water. The ringing of a bell, the gurgling of water. The cord itself is irritable. When patients do recover, it is with all forms of lesions of mobility & sensation - paralyzed as to an extremity or group of muscles. Give patient as far as possible quiet & freedom from extreme pain.

Give opium & Hyoscyamine. - Large doses of Morphine both by mouth & hypodermatically or by suppositories to decrease irritability. If treatment by cold is begun it must be kept up & so with heat.

Meningeal Hemorrhage. This occurs as in other tissues. As the vessel walls may become diseased in other parts of the body, so in the meninges. There are predisposing causes as in hemorrhage at other sites. They are those causes that affect other organs & structures - expression of diseased vessel wall ^{almost} always. Hypertrophied left ventricle becomes a strong predisposing cause of a rupture of a cerebral vessel or an exciting cause. It is a question whether any vessel may rupture without antecedent disease of its walls.

Haemophilia & age are predisposing causes. Fatty degeneration. The exciting causes may be as in other hemorrhages - straining, lifting heavy weights. Hypertrophied left ventricle. There may be metastatic change in the vessel walls. When the vessel is ready to be ruptured then comes the exciting cause. It may be the pressure of the blood by violent physical

exercise - or by posture, sleeping over. It is impossible
 to do any thing more than to make a shrewd guess
 as to where it is. The vessel may be small or large &
 amount of blood may be small or large. It may be on
 the right or left side, or the whole contour of the brain
 may be covered in. The symptoms that would
 exist in any given case would depend on all those
 factors, whether the hemorrhage were large or small &c.
 If it were confined to one side & were of such quantity
 as to compress the brain you would have hemiplegia
 on the opposite side of the body. If the hemorrhage
 were very large & were to break through the cerebral
 tissue & fill the lateral ventricles - you would have
 complete muscular paralysis. A hemorrhage that would
 not break through into the ventricles of the brain that lie
 in the meshes of the pia - between the two layers of the pia
 if diffused, would necessarily press both hemispheres, &
 you would have paralysis of both sides of the body. If
 you were able to determine that there were absolutely com-
 plete muscular resolution, then you would argue that the
 hemorrhage was general & that both hemispheres were
 covered by the blood which was extravasated, & you would
 call it a case of meningeal hemorrhage & not one at the
 base of the brain. If it were at the latter point, ordinarily
 you would have right or left hemiplegia. Don't make
 diagnosis in your own mind even, unless there is complete
 muscular paralysis. The patient lies comatose, snoring
 - you don't know where the hemorrhage is. You know
 you have a case of cerebral apoplexy, but you cannot
 tell where until you determine whether the patient uses
 right or left side of body. If he moves one side, you know
 the hemorrhage is on that same side. The results are
 the same as from hemorrhage at the base of the brain.
 If the hemorrhage be quite small, the comatose
 patient will arouse & will have lesions of motility. If
 large there will be complete hemiplegia on opposite side
 of body. By & by the blood clot will be broken down, will

in large fatty change too. His life will be saved, but with greater or lesser paralysis. The blood may be extravasated external to the dura. It may be between the dura & the skull. It may lie in the meshes of the pia, or between the two layers of the pia - it may be external or internal to the dura - in the arachnoid cavity - in the two layers & filling the meshes of the pia. The same thing may occur in the meninges of the spinal cord - almost never, except as a result of traumatism.

Miliary Aneurisms. The vessels of the brain are peculiar in this - the peri-vascular spaces are very large - the vessel walls get little support. In the spinal cord they get support. No miliary aneurisms of the vessels of the cord as of those of the brain. Hemorrhage in the cord is very rare compared with cerebral hemorrhage. It occurs for the most part from precisely the same causes. There is a predisposition inherited as in haemophilic, or disease of the vessel walls with or without age, due to bad nutrition or age. It occurs chiefly as the result of traumatism. The blood is not so diffused as in meningeal hemorrhage. When the hemorrhage does occur, the symptoms would exist in proportion to the quantity of blood extravasated. If large so as to compress the cord there would be paralysis of all the body below the joints at which the cord was compressed; for the motor tract would be compressed & cut off from the centers. If the extravasation were very great, the paralysis would be profound & persistent. It must exist until the hemorrhage is relieved. A man gets a blow. Within 2 or 3 hours he complains of pain. He tries to move about, but his legs soon don't follow his will. By & by his legs are completely paralyzed. You know that in consequence of a direct blow there is rupture of one of the vessels & blood extravasated. You could make diagnosis in that case without difficulty.

Treatment same as when at base of brain. Prop head up. The patient is comatose; you are not sure

as to his condition. Watch him in order to determine that there is paralysis on one side or the other. He lies for hours without moving a muscle. If bleeding is still going on, he has benefit of position. As the cold, cut off his hair & apply ice bags or bags of snow. First depress temperature. If patient survive a few hours, the temperature will gradually creep up to the normal line & above it; if the hemorrhage recurs, as soon as the temperature reaches the normal line you know there is arrest of the hemorrhage for the time being.

Secondary hemorrhage. The patient's heart beats are lessened; a clot forms & arrests the hemorrhage for the time being. The heart beats with greater force & the plug is pushed out - you have secondary hemorrhage & the temperature goes down. You can tell by clinical thermometer if secondary hemorrhage has come. Put feet in hot water with mustard & apply mustard flasters.

Wrap feet & legs up to knees in a hot blanket. Then give a saline cathartic so as to drain the serum away from the blood. You lessen indirectly the intra-cranial pressure. Your immediate object is to arrest the hemorrhage that may be still going on in the brain. If patient live, address treatment to his recovery. If heart fails, give stimulants in proportion to heart's failure. If heart is weak, give alcoholic stimulants. If heart fails decidedly, give diffusive stimulants as Carb. of Ammonia. Keep heart beating until nature has time to dispose of the clot. Treat the hemiplegia.

Conoestion or Hyperaemia of the Brain.

There is such a thing as congestive apoplexy - overfulness of the vessels of the brain. It may be Acute - rapidly induced or Chronic - Passive.

The amount of blood at any time in the vessels of the brain & in the sinuses of the dura mater would depend upon the quantity of cerebro-spinal fluid within the brain itself, that is to say, the cerebro-spinal fluid & the brain act & interact, so that at one time there is more of the fluid

in the canals & more blood than at other times. If there be a great quantity of blood, if there be congestion of the cerebral vessels then the fluid is driven from ventricle to ventricle, from 2nd to 4th & through the foramen into spinal canal. It is constantly changing its position. The quantity of blood in the brain does change. Take a child, with the fontanelles not closed. Watch it when it sleeps & the fontanelles are depressed. When awake the fontanelles are fully up to the level or above it. When it sleeps the quantity of blood is decreased. The physiological condition of sleep is a drain from the brain; that of work is a full brain. You might have serous apoplexy if the serous effusions went through its walls. The compression would disappear as the serum was taken up. The spasms &c would disappear. We have rapidly induced congestion manifested sometimes by convulsions. It is as rapidly controlled as induced. There is another form of cerebral hyperaemia. It is induced by passive congestion. Suppose there be a clot or thrombus formed in one of the cerebral sinuses. Suppose something compresses both the jugular veins. The blood does not get from the cerebral sinuses. Compress jugular veins, you instantly become flushed; if compression continues you become livid. You are keeping the venous blood within the sinuses of the dura. Long continued slight pressure induces overfulness of the vessels of the dura. Suppose there exists thrombus of one of the sinuses; the blood fails to get beyond the place & you have persistent overfulness of the vessels of the dura, & passive congestion, & you have indications which would lead you to make a correct diagnosis, because before such a thrombus exists, before the blood is made capable of forming a clot in one of the cerebral sinuses, you must have conditions which would produce such. It occurs chiefly in children. You would have some disease that would change the quality of the blood itself & slow the action of the heart so that the formation of thrombi would be favored. Thus you would have a thrombus formed in one of the cerebral sinuses as anywhere else. If there be marked disease of the right heart, the blood

doesn't get through the right heart; it dams up through the descending vena cava, through the jugular then you have a slowed current which favors the formation of thrombi. There is another fact more common than rapidly or passively induced congestion. Busy professional men who have indigestion, dyspepsia from over mental work sitting over desks, anxiety or any account, don't sleep. That condition is induced in which there is overfulness of the cerebral arteries. The vaso motor centers become involved. The patient is vigilant - he can't sleep & because he can't sleep & must eat, there is reflex irritation of the stomach. He has flushed face, suffused eyes, headache, faint, aphasia. He is incapable of working. He suffers all forms of disordered sensation numbness in his legs & arms. If he persists in his work he begins to show mental failure & becomes insane. That insanity may be associated with paralysis, hemiplegia, or group of muscles or confined to one or both sides. The cause of this is excessive function. Large number of cases of this kind. If patient is a mental worker he must quit. Put him on plain simple food at intervals of 2-3 hours. Stomach largely at fault. Tell him to take a walk late in the evening until his muscles are tired. Give Potass. Brom. or Potass. Brom. & chloral. Change to Zinc Brom. gr ii - iii or Lith. Brom. Get patient away from causes which induced the cerebral hyperaemia. Watch stomach. gr x - xv Lactopeptin or pepsin. (Give always larger doses gr x - xv of pepsin. After a few weeks or months he will get well.

Chronic Hydrocephalus or Dropsy of the Brain.
 Recurring to that subject of the quantity in the brain at any given time of the cerebro spinal fluid - it was supposed to be due to the closure of the foramen that leads from the 4th ventricle into the spinal canal. If that were true, if the cerebro spinal fluid could not escape into the cavity of the spine & if it were constantly being manufactured in the brain, it would accumulate to such an extent that the ventricles would become filled with this

serum which is not the serum of the blood. Its sp. Gr. is 1007. It contains no albumen. If that were so you would have chronic hydrocephalus. The dropsical fluid which represents closely the cerebro spinal fluid, accumulates in such quantity that all the cavities of the brain are filled. By & by all the ventricle substance is permeated by the fluid, it becomes watery. By & by the fluid occupies the so-called arachnoid space; then lies between the two layers of the pia at the base as well as at the convexity of the brain & then necessarily the brain becomes large. Often children are born with this in the brain. In some cases, this condition is so great that labor cannot be completed without evacuating the serum. For the most part, children are born hydrocephalous. There is serum within the meninges at the time of birth. It may not interfere with labor but as soon as the child is born there is evidence that something is wrong sometimes there is strabismus & the child does not move its hands arms or legs - Lesions of motility - Child does not nurse as it ought to. The eyes dilate or contract or one dilates & the other contracts. The head enlarges very perceptibly. In some cases the quantity of fluid is enormous. It is a question of the dynamic condition of the brain. If the theory above is correct, that every case is due to the stoppage of the foramen which permits the fluid to find its way from the 4th ventricle into the spinal cavity, then one would ask - Where does the cerebro spinal fluid come from? Why should the spinal cavity dispose of more fluid than the brain can dispose of? Persons have come to believe that it is from some lesion that is inherited. The stoppage of the foramen may be part of the condition, but that it is inherited is true because members of the same family suffer from hydrocephalus. You will find insanity & epilepsy in the same family. It is ~~not~~ a question of diseased condition of the brain, of shutting up the way &c &c, but it depends upon a vitiated condition with a strong tendency to that particular form of disease.

Cerebral Hyperaemia. There is a constant shifting between the quantity of blood in the brain & the fluid in the perivascular spaces. It used to be thought that the brain was a shut sac & that the quantity of blood always remained the same. Sleep empties the brain, work fills it!

Active - Arterial.

Passive - Venous.

The white substance of the brain becomes red; little red points appear on a section. - *Puncta vasculosa*.

Causes of active hyperaemia of brain. - Mental disturbance - Protracted anxiety - Excitement - strain.

The causes act on the vaso motor dilators & symptoms result. Flushed face - throbbing carotids & temporal arteries - suffused eyes. - pain headache persistent. - Booming pulse - *timitus aures* - marked overfulness of cerebral arteries - inability to fix attention particularly on figures - sleeplessness - coma - habitual vigilance.

Active hyperaemia is rapidly induced & is found in connection with hypertrophy of the left ventricle. The presence of tumors causes local cerebral hyperaemia. This would be partial. The larger vessels are overfilled, the smaller vessels emptied.

Treatment Prop up head. Bathe feet in hot mustard water. Change surroundings. Apply mustard to calves of legs. Good hygienic conditions. Bromides - Na Br. for incision. Ice bag on head - cups to back of neck. Croton oil gr i - iii for Constipation

Rx Extracti aloes ℥ss.
Extracti hyoscyami gr XX
Extracti nucis vomicae gr vi
Resinae podophyllis
Pulveris ipecacuanhae aa gr ℥ss
M. et div. in capsulas No XX.
Sig. One at night.

Passive Hyperaemia. Causes - mechanical - compression of one or both jugular veins as by goitre - compression of descending vena cava or arch of aorta by tumor. Overfulness of veins & sinuses of brain. blowing wind instruments.

Symptoms. Flushed face - distension of veins of face.
Cyanosis - Sleepy - stupid - not comatose generally.
Treatment Fr. digitalis or digitaline gr $\frac{1}{2}$ ter die.
Find cause. Cure goitre by iodine. Aneurism or
 tumor compressing descending vena cava - incurable.
 Rest quiet low diet - never eat to repletion. Guard
 against constipation - Hygiene.

Cerebral Anaemia. Section of brain pale. Few
 red spots if any. Causes Hemorrhage, dyscrasia, leucæmia.

Symptoms. Syncope, disturbed vision, giddiness, nausea,
 convulsions, incapable of mental application. Found
 in connection with emotional disturbances. Fright &c.,
 cause fainting. Blood rapidly drained - heart ceases to beat.
fainting Treatment. Elevate the feet if faint is decided.
 Lower head - Dash cold water in face. Ammonia or
 other stimulants to produce reflex action of brain. Brush
 or tickle nostrils or throat - Strike palms of hands. Cure
 general anaemia, & cerebral anaemia will be cured.

Chorea, St Vitus' dance - Chorea Sancti Viti. Constant
 irregular, involuntary, jerking, twisting of muscles or groups
 of muscles. Found in connection with psychical or mental
 troubles. Chorea belongs to youth. It is seen in children
 6-15-20 years. It is rare after 25 or 30 years. Of 181 cases
 217 were between 6 & 15 years.

Hemi chorea $\frac{1}{2}$ body - Peculiar. It begins in one arm
 or leg, generally arm. There is at first a loss of co-ordinating
 irregular motions. After a few days it extends to forearm,
 then to opposite side. Then over entire body. Twitching of
 muscles of face, grimaces, awkward gait - a willed move-
 ment is accomplished at last at the expense of repeated attempts.

Try to carry water to mouth - sometimes can't feed themselves.
 Generally they walk, eat, drink, but absurdly. They seem
 to purposely grimace. Threatening, sad expression. $\frac{1}{2}$ body
 involved or group of muscles as one side of face.

Irregular Chorea. Chorea of amputated stumps of arm.
Imitative affections. Mocker becomes affected. Epidemic
 middle ages. People went to shrines of St Vitus, who prayed

that he might be able to benefit that disease. Dance of St. Modestus. Cure. Faith cure. Same as going to chins. No disease to confound it with. It is a functional disease of cerebro spinal axis &c. Found in connection with & sequel of Rheumatism. Acute & muscular. Eriocaulis. Subjects rarely die of Chorea. Capillary embolism of corpus striatum one or both sides. If hemichorea, corpus striatum affected on opposite side. If Chorea, capillary embolism of both sides of corpus striatum.

Jackson found that: (others failed) Depends on irregular discharge from vis nervosa of cortex of brain. Muscles that control coordination are affected, so chorea is called Insanity of muscles. If one side of face is involved - sterno-cleido-mastoid muscle - jerking of head - alternate expansion & contraction of muscles - stop when patient goes to sleep.

Exception: danger of death - nervous system worn out. Self limited disease majority recover in 4 to 6 weeks, treatment or no treatment. One Physician put his patients in a garden & isolated them.

Treatment Isolation from strangers & from friends who would offend. Don't comment on her. Treatment beneficial to arrest disease: - Fowlers Solution grt VI ter die for a child 10-15 years old, Increase to grt X after meals. When swelling of wings of nose & puffy condition of eyelids come, stop it. - From 2-4 days. Then begin again on small doses as before & continue. - Zinc sulphate with Dovers Powder. Child 10-15 years old. 3 grs each after meals daily. Increase Zinc sulphate 1 gr each till 12-30 gr are given ter die. Increase till movements are arrested or there is nausea. Give same amount of Dovers Powder. Then begin with the largest dose that can be taken without nausea.

Hemichorea or group of muscles obstinate. Give arsenic hypodermatically. Fowlers Solution grt V & Aqua grt V - inject daily - 5-10 injections will cure. Ether spray on spinal column. 10 m once a day. Saturated Tincture Cimicifuga racemosa, almost a

specific N-30 M - 3-4 times a day. Nearly all cases are anemic. Ferrum, Chloral, Bromides - Good food.

Tetanus. Lock jaw. Rare, important

Kind: Traumatic from injury (slight)

Idiopathic (reflex from worms, or spontaneously)

No constant lesion found after death. Prognosis always bad. "Traumatic tetanus dies," as old as Hippocrates.

Occasionally recovers. Whether traumatic or idiopathic or whether if traumatic it occurs long after injury or not, the first sensation is stiffness about throat, can't swallow well - no importance to patient - It may occur in traumatic form in few days to 6 weeks after wound. Sometimes many months, 2-3 years from occurrence of lesion.

Rule: If three weeks pass from date of injury the patient is safe.

Symptoms: - Contraction of masseter muscle & temporal. Trismus or lock jaw. Tetanic condition of muscles over bony ligaments compress teeth - Face laughing - Rissus Sardonius - Exaggerated reflex excitement of spinal cord. Tetanic spasms from slightest things. Relaxation comes on to a given extent - Opisthotonus Emprosthotonus Rare. Tonic contractions - Tetanic spasms. Slight muscular twitchings every few seconds or minutes. Patient looks like a statue. If a result of injury, of test of injury of lacerations of foot or hand & punctiform in character - treading on a nail.

Diagnosis. easy. Rigidity of muscles peculiar. Paroxysms upon attempts to move. Opisthotonus &c. At the outset the idiopathic form might be like acute spinal meningitis - but in a few hours could differentiate. Spinal cord highly excited.

Treatment. 1 Arrest excitement of cord by narcotics. (Opium produces narcotism but not relaxation.)

Chloral gr XX-XXX every 2 hours in mucilage. Morphine hypodermatically; or + atropine. Chloral + Brom. of Potash, or by enema. Combined Bromides. Revulsives to spine &c of little effect. Equal parts Ether & Chloroform. Old treatment Opium gr V-XV; or Morphine

gr $\frac{11}{16}$ - $\frac{11}{16}$ every 4-6 hours. Blister or burn cord.
Caustic Potash. No good results.

Delirium Tremens. (mania a potu.)

Causes. Continuous use of alcohol.

Deprivation ~~of~~ alcohol.

Symptoms. Anorexia - Vagaries, illusions, hallucinations.
Trembling (sometimes) - Perspiration - Vigilance - Nausea
Vomiting.

Treatment (to produce sleep) Opium, Morphine hypodermatically or + Atropine. Chloral or + Potassium of Potass. equal parts - gr $\frac{15}{16}$ every 2 hours; followed by gr $\frac{1}{4}$ Morphine + gr $\frac{1}{100}$ Atropine hypodermatically.

Cold sponging, particularly if skin is dry & head hot.

Tinct. digitalis & Tinct. Cinchona aa \mathfrak{zss} . Milk Punch 1-2 \mathfrak{z} every 2 hours. Get mental & moral control of patient.

Hydrocephalus (Continued) The quantity of liquid varies in different cases. In many cases the child is born with watery brain. The duration of any case would depend upon whether or not the child were born so. In cases that come after birth the duration would depend on circumstances. In many cases it is astonishing how readily the brain adapts itself to pressure slowly applied & thus all the functions of the brain are in some cases preserved throughout the history of the case. The affected child is sooner or later idiotic. When the quantity of fluid is great, the sutures of the brain fail to coalesce so that the bones of the cranium are dislocated. Or the cranium is pushed forward so that the front of the child's head is so enlarged that it projects & then there is a slope from the front toward the chin, the occiput is pushed backward & becomes horizontal. The parietes are pushed outward & upon application of the hand to the child's head it is easily seen to be abnormal. It feels like parchment crackles like it. Place the child's head in front of a very strong light, it is semi-transparent showing that it contains a transparent fluid. In some cases it becomes

In some it is red in others white blood discs. Sometimes bones granular, thick, flocculent. Meantime the child has spasms, repeated - internal strabismus; or if not strabismus, that constant rolling of the eyeball - the whole condition of the child is such that there is no mistaking the diagnosis. The separated bones, the enlarged frontal eminences, the thin bones, semi-transparency, enlargement of the bones tilted out of their normal condition make it impossible to mistake the diagnosis.

Treatment - general & local - The general treatment consists very largely (since the whole question is one of nutrition in sustaining the general nutrition). Foods. If the child is young & its mother can't nurse it, a wet nurse must be procured. If that cannot be, & the child is older give milk cod liver oil & Syrup. Ferri Iod. The child must be placed under the best hygienic conditions. Attempts have been made to withdraw through a cannula a small quantity of the fluid & then compress the brain with adhesive straps, applied so that the bones of the cranium are compressed. A series of withdrawals of the liquid & a series of strapping will so lessen the cavity of the skull so that the brain will be supported & the quantity of fluid lessened. There are some cases on record in which success has resulted from that method.

One of the older ways was the use of Mercurial ointment over the scalp & head to secure its effects up to the point of Styalism. As in other dropsies Mercury is used for similar purposes. But that treatment is now abandoned.

Use nutrients, tonics, Ferrous Iodide. In some extreme cases the ventricles being filled, the two hemispheres make mere shells for containing the fluid & the hemispheres are driven down to the base of the brain. Convulsions are flattened.

Cerebral Hemorrhage or Hemorrhage into the Parenchyma of the brain. One of the cerebral vessels ruptured, its walls broken & blood extravasated into Parenchyma. This is from some branch of the circle of Willis at the base of the brain. The causes are the

same as in other conditions. (Miliary aneurisms precede it. Formerly thought walls stretched.)

Causes are Predisposing & exciting. The first go to affect the integrity or quality of the walls of the vessels. Age is a large factor. In the physiological decay of age the vessel walls suffer in their nutrition as the general nutrition suffers & they are therefore ^{the} more easily ruptured. Either as the result of inflammation of the vessel or fatty degeneration as a question of advancing age. Small aneurisms, the so called miliary aneurisms. The aneurisms are easily ruptured. It is very rare that a person suffers from cerebral hemorrhage under 30 years of age, rarely under 40. From 30 to 40, there are comparatively few, from 50-60-70 more & more & soon. These being diseased vessel walls that are easily ruptured, if the left ventricle of the heart were enlarged so that the intramural pressure were increased - (In cortex, vessels seldom ruptured except by a blow. - by reason of that fact, that is, the heart stroke from behind, pushing the blood into a vessel suffering from miliary aneurism, would be more likely to rupture the vessel, than if the vessel had retained its integrity & that, thus becomes one of the factors in making your diagnosis.

If you had doubt as to whether the case were cerebral hemorrhage or not, if you learn that your patient had been rheumatic, acute or chronic, or had suffered from endocarditis or pericarditis, or both & as a result, there was hypertrophied ventricle, or if he had suffered from some obstruction (thickening of the semilunar valves) in the veins, as that the left ventricle hypertrophied were a result of life saving process - that becomes a factor in diagnosis. An hypertrophied left ventricle increases the blood pressure & would rupture a vessel - All sorts of muscular movements increasing the intramural pressure would become exciting causes.

In a large proportion of cases of cerebral hemorrhage, you will get a history of some violent muscular effort or the occurrence of some exciting event so that the action of the heart is hurried & the blood pressure increased, as an exciting cause & the patient topples down with all the facts of cerebral hemorrhage.

The effect in every given case, other things being equal, would depend upon the quantity extravasated. In some cases it is very large. In some cases the parenchyma of the brain is torn, lacerated at the base & the blood clot finds its way into the ventricles & fills & distends them so that after death the convolutions are flattened by internal pressure. Again, the hemorrhage may be only as large as a pea, then the remote effects as well as the immediate results would depend upon the quantity of blood extravasated. In a typical case, the patient may be confused for a few minutes or hours. You may get a history of antecedent attacks of vertigo & they may stretch over a few years or weeks or days only, but if you get a history which indicates that the patient had suffered increased blood pressure of the cerebral vessels, so that vertigo was produced & ringing in the ears, also disorders of vision & these recur again & again & finally a vessel would be ruptured & you would have all the symptoms in proportion to the blood extravasated.

In a typical case, the patient after a few minutes or hours or days of antecedent facts threatening symptoms, so called, has a pain in his head, confused as to his surroundings & condition & possibly he will fall. A man sitting on his chair talking to friends, no antecedent symptoms, he becomes confused, slight violent pain in his head; he put his hands on his head & fell forward on the floor - still he was conscious. I reached him in about an hour, he was still conscious in a degree. He soon relapsed into profound coma. The patient loses consciousness entirely, action of heart is slowed. Pulse goes from average 72 down to 60-50-40. Respiration slowed in the same way. It becomes stertorous, noisy. If that be marked, then you have insufflation, owing to flabby conditions of the muscles of cheeks. The cheeks are blown in & out & thus that noisy insufflation. Pupils contracted, sometimes dilated; sometimes one dilated, the other contracted. You cannot depend absolutely upon any condition of the pupils. When compression takes place (in after history of case then the pupils dilate. The patient lies in that stupor comatose condition & there is doubt at the outset on

which side the lesion has occurred. In a typical case there is from the outset a hemiplegic condition - paralysis of leg or arm on opposite side to that of the lesion. If the rupture of the vessel occur in the right side, the left side is paralyzed. In many cases the patient vomits - there is nausea. The man who fell from the chair vomited. His friends said that was a good sign. They did not know it was quite a common sign & not a good symptom. He may vomit again & again until he passes into a profoundly stupor, comatose condition from which you cannot arouse him. The word apoplexy means a stroke or some cause quickly applied with force of a blow. Test temperature - at the outset there is an initial depression. It is rarely well marked - rare that amounts to more than one degree. In extreme cases it amounts to 20 or more. If patient survives some hours the temperature gradually rises to the normal line or possibly beyond it & you can determine that reaction is occurring or maybe irritation is just set up in the brain by the conditions that exist. If the hemorrhage recedes, then again the temperature will be depressed & the thermometer will give valuable information which you could not get by the ordinary objective facts of the case. If the patient survives, it becomes apparent by & by that he is paralyzed - has hemiplegia. If he survives, as the brain accommodates itself to the compression which results from extravasated blood &c., then the stupor gradually passes away & he becomes conscious of his surroundings & condition & can answer questions & in a few days, it may be he recovers the use of his intellect but he is hemiplegic. Ordinarily if the paralyzed condition be not extreme, the arm suffers more than the leg. The use of the leg is also regained before that of the arm. The toe drags. If use of arm is regained before that of leg, it is a bad symptom - bad prognosis. In many cases there is early rigidity. After a few days the muscles of arms & legs or certain groups of muscles as the flexors & extensors, will be contracted & held indefinitely in that condition. Sometimes the patient half way recovers from the hemiplegic state & late rigidity takes place, it is a very curious state or

condition in the brain or parenchyma, which would induce in one case, one condition & in another case, another condition. Why should there be early rigidity in one case & later in another when the same vessel was ruptured & when the clot lies in precisely analogous parts of the brain. This is said to be explained of late rigidity, that it is due simply to irritation of the brain. Certain inflammatory processes are set up which irritate the motor tract of the brain & then we have early rigidity. Why early in one case & late in another we don't know. The patient surviving is always left hemiplegic.

When the cases are well marked, certain things are observed. Patients face is paralyzed. When he recovers enough to answer questions, he will try to push his tongue out & will push it toward the paralyzed side. The muscles of expression are involved.

The zygomatic muscles. If the paralysis be quite marked & sometimes it is, particularly when he attempts to laugh - in some cases the food collects on the paralyzed side, between the cheek & gums, so that patient has to remove it. He enunciates words badly. While the muscles of face, legs, & arms suffer, the muscles of chest & abdomen do not suffer. If the muscles of one side of chest & abdomen - those concerned in respiratory movements were paralyzed, there would be serious interference with the process of respiration, but that is not so. That has been explained satisfactorily by supposing that the nerve centers which give origin to the nerves which supply the muscles of the chest, are connected longitudinally, have transverse, as well as longitudinal commissures. If the centers which give origin to those nerves were injured in the longitudinal commissure, the transverse commissure would be supplied from the sound side & that center would come to act by its connection with the sound side.

Looking at groups of muscles affected we see those muscles which are paralyzed most profoundly are those which we can move independently, though it may be we use them ^{habitually} bilaterally. We use legs hands & arms in different ways. We can move either limb independently of the other. You can't move the muscles of one side of the chest without moving those of both. They act bilaterally. So with the abdomen. If one side is contracted the other is also. Those muscles which escape are the ones

that are used bi laterally. The patient recovers from the shock & depression, the immediate result of the rupture & so on, & he is hemiplegic.

Treatment. During the time he is comatose, during the time he is suffering from the immediate effects of the cerebral rupture & hemorrhage, you take the same I have advised you in like cases again & again. Put patient's head on a pillow, - apply cold to the head & mustard flasters & hot foot bath to feet, or mustard in water. Cathartics to purge & if it is best to rapidly produce catharsis give 1 or 2 drops of Croton oil. Suspend the oil in mucilage & put it on the tongue, it will produce the effect of purgation if it is not swallowed. Keep the heart quiet & reduce intra-mural pressure to the minimum. Consequently cathartics are indicated. After moving the bowels thoroughly once, give saline cathartics Potassium Bromide. Give patient absolute rest & quiet - no muscular effort allowed that would increase the action of the heart. If nature has plugged the ruptured vessel the clot might be pushed out & hemorrhage return. Watch your patient. If heart fails, give stimulants, brandy or whiskey or milk punch. If heart failure be very decided, give Ammonium Carbonate suspended in mucilage, sustain the action of the heart. In some cases give *Pr. digitalis* grt XV every 4 or 6 hours until you get tone; strengthen heart, then wait.

Some use Potassium iodide or rather iodides. I can't conceive how any effect can be produced by the iodides. I doubt whether it would be given by any rational physician to produce reabsorption of the clot. Wait until that time comes when you see that the patient will survive, but is hemiplegic. He must have good food, the strictest diet, hygienic conditions & quiet. Treat hemiplegia. Nature will take care of the parts if the patient survives. Solid constituents will break down, undergo fatty metamorphosis, &c. Advise patient to use muscles that are paralyzed. He must will to use them. He must practice massage to keep up nutrition of paralyzed muscles. He must rub his own arm or leg or have some one rub it, from the moment it is found he will recover. Rub

slap, pour, beat the muscles, then bring into force the will. That is important. Use galvanism, either primary or induced current, once a day. Bring battery into position so as to stimulate the paralyzed muscles along the line of great nervous cords. After Paralysis has become chronic you can get surprising results from the use of strychnine hypodermically. You can give it by mouth & must commence with small doses & gradually increase them until you produce constitutional effects of the drug - until you produce a tetanic condition of the muscles of the back. It is the uniform experience of the profession that, used hypodermically it is best. Begin with gr $\frac{1}{32}$ once a day, gradually increase to $\frac{1}{20}$ or $\frac{1}{16}$ of a grain until you get tetanic movement of the muscles. If after 15 or 20 doses you do not get any good results, suspend it. Wait for a time. Massage, galvanism or electricity. (Unconscious 2 or 3 days)

Embolism, & Thrombosis of Cerebral Vessels.

Any cerebral vessel may be the subject of thrombosis, & the blood supply would be cut off in proportion to the decrease in calibre or size of thrombus relative to the vessel. A thrombus forms slowly. The symptoms come on slowly. A thrombus may form rapidly as by an embolus making a point for a thrombus. Thrombus depends on collateral circulation & degree to which the blood is cut off. Complete hemiplegia rarely results from thrombus. History of thrombus of cerebral vessel - Mental confusion - Headache - General Malaise - Motor disturbance of the eye & extremities Paresis on opposite side to that of the thrombosed vessel. Hemiplegia. (Cortical system of vessels, feed cortex of brain) Left middle cerebral vessel most likely to be embolized. Circle of Willis - all are true end arteries. An embolus rarely passes into the vertebral arteries, often into the left common carotid or left cerebral. Anything that cuts off the blood supply from the true end arteries causes hemiplegia on opposite sides. Coma as a result of thrombosis or embolism very rare. It is a curious fact that precisely opposite conditions

of the brain give the same set of symptoms.

When the vessels are thrombosed or may be plugged by an embolus, in either case the blood is cut off from the area of the brain supplied by the thrombosed or embolized vessels & consequently, exactly the opposite condition is produced from that when a vessel is ruptured & the fact is made known by precisely the same set of symptoms. The quality of the symptoms differ. When one of the cerebral vessels is thrombosed (& it becomes thrombosed for the same reason that other vessels become so) from diseased vessel walls, fatty degeneration at one particular point, roughened surfaces in consequence of that deposit in the blood of fibrine - the thrombus grows day by day & week after week, until the blood supply beyond is cut off. A slowed action of the heart is another cause of thrombosis. In low forms of disease when the blood itself is altered & when the heart is weakened & the blood goes slowly, tending to deposits & particularly when there is in association with these conditions, general prostration resulting from depressed vitality, whether from acute or chronic disease, when there is that slowed condition of the heart, thrombosis tends to form. What are the symptoms? Any vessel, any member of the Circle of Willis may be thrombosed. What happens? At the outset the blood supply is scarcely at all interfered with, but as the thrombosis grows, the blood is cut off more & more & when a sufficient quantity is cut off from that area of the brain supplied by the thrombosed vessel, you begin to get symptoms. The patient gets giddy, it is difficult to preserve upright position in walking. He has tinnitus aurium, cerebral anaemia & headache. He does not see things right. There is a strong tendency to lethargic condition, a condition in which the brain operates comparatively slowly & in which there is excess of tendency to sleep. By & by if the thrombosis growing larger day by day, comes to quite fill the vessel & plug it, then that fact is made known by lesions of motility.

the patient is paralyzed as to the right or left half of the body, on the opposite side to the one on which the lesion occurs. Or there may be spastic contraction or simple contraction of the muscles or twitching of muscles. Something is wrong & that something lies in the brain by the occurrence of both sensory & motor phenomena, it may be profound paralysis if it is quite a large vessel. For instance, if the basilar artery be thrombosed fully, the patient sinks into a comatose condition & by & by dies from cerebral anaemia or exhaustion. When thrombosis occurs in one of the cerebral vessels the processes are slow the blood supply is cut away slowly. Anaemia of the brain is induced & then we get all the symptoms that have accumulated as a result of that fact. Precisely the same set of symptoms are produced by embolism.

Embolism occurs for the same reasons as in other vessels. It is most likely to be associated with disease of the heart caused by rheumatism.

To make the diagnosis between cerebral embolism & cerebral hemorrhage, you must get the fact either from the patient or his friends, if he has been the subject of rheumatism & certain facts will enable you to distinguish between the two diseased conditions. The symptoms caused by embolism are produced independently, rapidly; not slowly as in thrombosis because the vessel is plugged rapidly.

The subject may be at his business & all at once he has a sense of pain, & then confused intellect, & next he is conscious that he cannot move his leg or arm on one side or the other. He has hemiplegia. That confused intellect may exist a few hours or days & then comes accommodation of the brain to the new conditions, unless the embolus completely plugs the vessel, & then the phenomena always gradually subside. Take a case in which there is complete plugging of the vessels. The supply to the brain is at once cut off. There is cerebral anaemia; he is paralyzed & loses consciousness completely. Very rarely is ^{there} that condition of absolutely complete coma, but there is quite profound coma. You find hemiplegia, coma, slow stertorous breathing,

everything indicate that there is something wrong in the brain & you know it is one of two things: a plugged, or ruptured vessel. How do you know which? In the first case, in cerebral apoplexy or cerebral hemorrhage the upper part of the body, particularly the face & neck is flushed dark color. That would enable you to distinguish between them. In the other there is anaemia & the face is pale. You could not depend fully on that fact. What next? Take into consideration the age of the patient. If young the chances are in favor of embolism. The subjects of cerebral apoplexy are seldom under 40. If the vessel were not so plugged as to produce all the phenomena of coma. If the patient be able to talk, ask him if he ever had rheumatism; if he had, examine the heart & find if diseased. That is a strong argument in favor of cerebral embolism, because endocarditis & pericarditis are associated with rheumatism, & when either occurs, there is danger of persistence of the endocarditis & then fleshy deposits on the valves, & by & by, one of these deposits is washed away in the blood current, carried through the ventricle, through the aorta, through the ascending part of the arch & swept off in one of the vertebral vessels & plugs one of them. — Argument in favor of Cerebral embolism. In vertebral rupture there is an initial period of depressed temperature; that may occur in an extreme case of plugging of one of the cerebral vessels. It is never so marked as in cerebral rupture. When condition of embolism is complete then you have ~~hemi~~ plegia. It is not usually so marked as when it follows rupture of one of the cerebral vessels. Treat hemiplegia as you would treat it no matter how produced. You can't remove the clot, nature can do that. In cerebral embolism have patients head low. in cerebral rupture have patients head high. In cerebral hemorrhage give sternutants instead of cathartics, but give the latter if there is much constipation. In cerebral rupture give cathartics. In cerebral embolism give *Sr. digitalis*

or digitaline & alcoholic stimulants. Time is an important element to relieve the case. The same thing occurs in the brain as in any other part of the body. Tie a vessel leading to a limb, the blood will be supplied by collateral circulation. Suppose the anterior cerebral vessel be plugged in a few days, the blood that would pass through that, passes through the other channels. New capillaries result & nature entirely restores the difficulty, as when the surgeon ties the femoral artery for popliteal aneurism, he depends upon the collateral circulation & by & by the limb gets to be just as well fed as it was prior to the existence of the aneurism, or prior to the ligation of the artery. When the blood is cut away in the brain by an embolus, new channels are formed in the course of time & the blood flows along as before. You must treat the patient during the time you are waiting. You must restore lost tone to muscles. Same agency as mentioned before, - massage, electricity, galvanism, Strychnine hypodermically. Massage highly important, almost at the outset. Later on electricity would be well borne & is universal for Paralysis. Patient must also use the paralyzed muscles. You must prevent that condition which results from rest of a muscle & atrophied condition. It is also likely to undergo fatty degeneration. Paralysis is produced by these facts: rupture, organization of thrombus embolism. There are certain other phenomena in connection with these, 3 conditions which are curious; agraphia, aphasia. He is speechless or unable to express his ideas, because of paralysis of tongue, lips, teeth & palate. It is not ataxic but amnesic. If the muscles of the throat were paralyzed so that you could not use them, then you suffer from aphonia. In aphonia you cannot coördinate the muscles in order to talk. That is not true in aphasia. Aphonia is paralysis. Aphasia is lack of mental ability to coördinate ideas. The patient knows what he would like to say but he can't express himself. If he suffer from ^{ataxic} aphasia & amnesic aphasia, he can both write & speak, but nothing at all that in his mother tongue would express the correlation of ideas so as to make good common sense. The attempt has been

making for the past 25 years to assign to each part of the brain its share in sensory & motor conditions, but to each convolution of the cortex as well as to each of the great convolutions at the base of the brain, its particular function in all the coördination of that which enters into all our daily lives, sensation, feeling & movements.

It is observed that when there is right side hemiplegia, ^{when the lesion exists in the left hemisphere,} whether it be a lesion due to anaemia induced by embolism or whether it be a diseased condition resulting from cerebral rupture, the patient is more apt to suffer from aphasia ^{both sensory & motor} than when the lesions occur on the other side of the brain. This would lead us to think that the speech center is on the left side & so it is. That particular part of the brain which is concerned in speech is the lowest part of what is called the ascending convolution, just in advance of the fissure of Rolando (Anterior lobe). Lesions of left side of brain cause aphasia which is simple forgetfulness of words. It is curious that lesions of one hemisphere produce lesions that would not be produced by corresponding lesions on the other side. Our brains are double. By long ages of use the right side of our bodies are educated at the expense of left. Most persons are right handed. The left hemisphere responds & is developed ~~to~~ to a point beyond that of the right. An ambidextrous person has one side of the brain developed as much as the other. A curious fact is when injuries on the right side induce aphasia, it is found largely in connection with left handed persons. It is just about the "island of Reil" & the posterior part of the 3rd convolution, in which the speech center lies & these more lesions produce aphasia. When you find aphasia in connection with paralysis, you will recognize the fact.

Conditions which result from either injuries or inflammation of the brain & cord or from compression by tumors or from different injuries or diseased conditions of parts of the cord that are involved in the greatest

possible obscurity as to their pathology & symptomatology. We have had such observation of these cases as to put the symptoms together & assign them to some absolute condition in cases with the cord or brain. In anterior Poliomyelitis there is inflammation of spinal cord at some point somewhere. The anterior great cornua are involved in diseased conditions & that is manifested by paralysis of one kind or another, Progressive Paralysis & wasting of tissues. These are referable to no positive causes.

Progressive Locomotor Ataxia. - Posterior spinal sclerosis takes Dorsalis (Tactile sense lost). This is one of the most chronic of diseases. It is rarely that a case does not extend over a few months. Extreme cases last 20 to 30 years. As a rule the subjects die, not of that but of something else. Certain parts of the posterior column of the cord, it used to be held the whole of the posterior column from posterior root to posterior root were involved. It makes no difference whether the diseased condition in the end is inflammatory, whether it is preceded by inflammatory processes or whether it is a question of degeneration simply from the outset. The fact is that that which is typical in the cord of either inflammatory processes or simply lesion of nutrition & consequently degeneration is sclerosis - the cord hardens. Those parts of the posterior columns which you know to be involved are the posterior root zones, the columns of Burdach which embrace the posterior root zones, the posterior cornua somewhat & then there are just on either side of the posterior median fissure, the columns of Goll. Immediately on either side of the posterior median fissure is a space which is not involved in the sclerosis. Sclerosis may occur in any part of the spinal cord - in the lumbar region (where it oftentimes occurs in the dorsal or in the cervical region). That which is characteristic is 3 changes:

1. Color 2. Consistency 3. Structure.

Even to the naked eye looking at the posterior part of the cord we see that there are 3 streaks up & down the posterior columns of the cord, & instead of going bright

& being white, it would be gray; it would be harder than the natural consistency of the cord. Instead of being normal in its size, it is shrunken. Sclerosis generally begins in the lumbar region, it is frequently seen throughout the entire cord. No matter whether it occurs simply as an expression of degeneration or persistent inflammation about which there is dispute. Whether it has origin as a degenerative or as an inflammatory process, it occurs always in the cord as a typical formation as the one or the other condition. Often the symptoms which first are felt by the patient in 'Tabes dorsalis' are taken for rheumatism. Ten years ago the pre ataxic symptoms might have been mistaken for rheumatism symptoms. — Pre ataxic & ataxic.

When there is lack of muscular coördination particularly of the legs — when there comes the fully developed disease these are the ataxic symptoms. Some symptoms come as pre ataxic symptoms. One of the very first symptoms & of which we would put you on your guard is a sense of being tired & particularly does that sense exist in the ankles & feet. With these pre ataxic symptoms are lesions of sensation with reference to the lower part of the body if only the lower part of the cord be involved. If the cervical part of the cord the symptoms relate to the upper part of the body. If the cervical enlargement of the cord be involved there will be some lack of sensation, or some in one hand or the little finger or only as to the distribution of the ulnar or median nerve. Whatever may be the fact whether the symptoms began in the right arm or leg, sooner or later it will be bi-lateral & symmetrical. If it began in the little finger of the right hand, the ulnar distribution on the right side, soon the ulnar distribution on the left side will be involved. All sorts of paraesthesiae lesions of sensation — numbness particularly. One of the earliest of these pre ataxic symptoms is an eye that won't respond to light. The Argyll Robertson

pupil. If it is small it will not be enlarged by darkness. There is failure of response on the part of the pupil to the impression of light - a reflex movement. Early in the history of the patient, there is a development of the so-called ataxic symptoms - the knee tendon reflex is lost. There is a long list of deep seated & superficial reflexes. Take that which is typical of all reflexes, the knee tendon reflex. Take a healthy person, let him sit cross-legged, strike tendon of straight muscle that envelops the knee pan & you will get a response of the reflex. (Strike Ligamentum Patellae.) That knee reflex is lost in most cases of Locomotor Ataxia early in the case. In some cases it is regained & lost again & so on. The loss of this knee tendon reflex is not at all peculiar. One of the strangest of all the phenomena which attach themselves to this is the fact that every now & then there will seem to be a complete let up to all the symptoms. The patient will grow better even after the ataxic symptoms have developed & the physician will think he has cured the case. There is almost complete remission of all the symptoms.

Again, there are all sorts of lesions of sensation, later in the history of the (pre-ataxic) symptoms, hyperaesthesia comes on, but tactile sense is sometimes wholly lost. Sometimes there is analgesia. There is no sensation of pain but patient can feel. When he begins to find that he cannot stand with his eyes shut & his feet together, you can prick him with a pin. He will know you have pricked him with a pin, by the tactile sense, but he has no pain till, after a few minutes, then he will feel it. So physiologists thought there were two sets of nerves, one for pain & one for tactile sense.

Put feet in hot water, the tactile sense is complete, but on account of the slow conduction it is a long time before the patient says his feet are warm.

1. Numbness 2. Argyll Robertson pupil. 3 Loss of knee reflex. As the disease goes on covering a still greater area of the cord, the ataxic stage comes on. The 1st symptoms are - loss of sensation ⁱⁿ his feet - shut eyes in bed, he could not tell where his feet were. When he stands, s. pr.

nounced is the loss of tactile sense on the soles of his feet, he feels that he is standing on blades, or thick carpet or sand dust. By & by he almost wholly loses his tactile sense as to his toes, soles of feet then as to his ankles & hips. In the part most distant from the body the tactile sense is most lost. In walking he will use his thighs because he can feel them. He can appreciate weights in the hips, he does not use muscles below the knee or feet. By & by so lost is the tactile sense that if you place him in an upright position, feet together & say shut your eyes & stand the moment his eyes are closed he topples over. It is not a sense of giddiness, it is as if some power were pushing him over. Ask him to walk with his eyes shut & he cannot. Ask him to run with his eyes open & he cannot. It is not paralysis. There is no paralysis about it. Paralysis may come on later, there is none now. Place him flat on his back on a bed & ask him to lift a weight with his toes & he can do it. He cannot walk because he cannot co-ordinate his muscles. He cannot determine where his feet are. Then a very peculiar gait comes, it is quite common now. He swings the leg from the thigh. The heel strikes the floor first, then the toe — ataxic gait. All this time it may be that those symptoms that ushered in the attack — if the lumbar parts were involved, the legs would be involved; if the cervical & lumbar, it would affect the arms & legs. It goes on from year to year & then the ataxic symptoms come on. One of the most characteristic symptoms that may come early in the case or with the ataxic symptoms — lightning-like pains. Some pre-ataxic symptoms pass over into ataxic symptoms. Lightning-like pains do this. This pain is intense. The earliest symptoms are taken for the most part to mean muscular rheumatism. In some cases the joints are affected. That would make you think it was rheumatism. There is exudation into the joint & into the synovial fluid & it is not the structure of the joints commonly involved in rheumatism that are involved

in locomotor ataxia. The history in all the cases each presenting its own particular phenomenon, - it is enough to know that at the outset of the cases, the prelatytic symptoms look like rheumatism. The pains of rheumatism are increased by movement & pressure; the lightning like pains are sometimes removed by pressure. Don't make up diagnosis until you have fully developed all the facts of the case; then from all the phenomena, including the Argyle Robertson Pupil (which you won't see in every case) make diagnosis. Some cases run their course in three or four years & the patient takes to his bed & dies from exhaustion; toward the end there is paralysis. All these symptoms will not be found in any one particular case, but the Argyle-Robertson Pupil will suggest that the cord is involved. By & by paralysis of sphincters & the urine is retained or it dribbles away. Then there is obstinate constipation, almost impossible for bowels to move. Then he goes to bed & dies from general failure of nutrition & exhaustion. There would be no possibility of making a mistake in diagnosis late in the case. The gait itself is enough. Earlier it would be harder. The question is not to diagnose it rheumatism. The pains are unlike; the reflex is understood today, also the Argyle Robertson Pupil, that were not understood 15 yrs ago. There is little to do. Every now & then there is arrest of the trouble & the patient recovers. There is complete remission of the symptoms for months & months & you think the patient has recovered, but he has not. You must consider the case. If a man with progressive locomotor ataxia were to come to me & I found it was due to syphilis, then I should treat for syphilis. If it were due to chronic alcoholism (as it often is,) if the patient were not too aged & I could get control of him, so that he would quit his drinking, then I would hope it might be successfully treated.

It is an expression of a lesion of nutrition. Not simply the result of an inflammatory process. Keep up nutrition; give good foods; correct bad habits; send him traveling; give strychnine hypodermically or by mouth, continued in small doses for months; pushing it till you produce the muscle jerk.

at the back, then suspend a week or two, then go ahead again. Electro galvanism. The most that can be done for the time being, is to arrest the tendency to hurry that occurs in some cases. It is the very type of chronic disease. This is the most chronic of all chronic diseases. In any case the best method is to conserve by every agency, the best general health.

Neural Paralysis. Due not to lesions in the brain or cord, but to lesions that affect the nerves themselves.

Central Paralysis - Peripheral Paralysis (Comparatively rare) - Paralysis of 7th nerve (Bell) - Mimetic Paralysis.

The 7th pair of nerves supplies nearly all the muscles of the face. If it were paralyzed you would get symptoms of paralysis in nearly all the muscles of the face.

Most prominent facts: The eye would be wide staring (on one side). Once in a while both sides are affected. Why wide open eye? The orbicularis palpebrarum is supplied by the 7th pair, but the Levator palpebrae superioris is supplied by the 3rd pair. There is no antagonism to the latter because the round muscle is paralyzed & consequently the raiser of the upper eyelid having nothing to antagonize is pulled wide open. The patient can masticate his food as well on one side as on the other. The muscles of mastication are supplied by the posterior root of 5th nerve. The two pterygoids, masseter &c are supplied by the 5th nerve. One half of the mouth is dropped down. The mouth is pulled in the opposite way, but the patient drives his saliva out because there is nothing to prevent it. The buccinator is supplied by the 7th pair & is paralyzed & in consequence the food cannot be shifted in the mouth. It collects between the gums & cheeks; that is one of the symptoms. In elderly people it smooths the wrinkles on that side of face.

The occipito-frontalis (anterior belly) is supplied by the 7th pair & being paralyzed throws a completely blank expression as to the front of forehead. The wrinkles which exist are lost. It gives the face a smooth appearance.

Origin of 7th pair, in posterior part of pons varolii, lateral tract of medulla. Passes forward in connection closely with the auditory nerve & enters the internal auditory meatus, in connection with auditory nerve. It separates as soon as it enters the ~~the~~ internal meatus from the auditory nerve & passes into aqueduct of Gallopius. The moment it enters there, it spreads out & there is a ganglion formed. It then passes out through the styloid foramen. While in the aqueduct of Gallopius it gives off the great & small petrosal nerves & chorda tympani. The great superior petrosal sends a branch to Meckel's ganglion & then goes to supply the uvula, palate &c. The small superior petrosal sends a branch to Otic ganglion of sympathetic & that a branch to tensor palati. The chorda tympani passes to anterior third of tongue & is ~~the~~^{the} nerve of special sense of taste. The anterior third of tongue would be paralyzed & there would be ~~no~~^{loss of} taste. If anterior third of tongue is paralyzed, lesion ~~of~~^{above} where the chorda tympani is given off. If palate were paralyzed the uvula would pull to one side. If orbicularis oris is paralyzed, result, he cannot speak as he should, cannot use his lips well, cannot laugh, whistle or pronounce labials. Wide staring eye, lacks expression - food accumulates in one cheek, labials not formed well. If above the chorda tympani branch or the other branches, you can find out where the seat of the paralysis is. If while it is still in the stylo-mastoid foramen or just after passing thro. the lesion takes place, you would have involvement of all.

Causes. Reflex action from worms.

Intestinal irritation.

If you make your diagnosis that nerve ~~has~~^{is} pinched, the cause of rheumatic thickening of sheath. You have your limitation as to treatment. Cure rheumatism, you cure paralysis - If syphilitic treat syphilis - Give potass. iodide & Bichloride of Mercury for syphilis. If cause is cold, expose to heat.

Treatment Massage, induced current (1st where

nerve comes from skull, the other 6 muscles). Strychnine internally, hygienic treatment, - Arsenic is good.

Miasmatic toxæmia is a cause - give Iodine or Potas. Iodide (Lugol's Solution) or Solution of Quinine & Arsenic.

If there be no organic lesion of the nerve itself, if disease of the nerve shift, the rule is that with care on the part of the patient, avoiding cold & all sources that give origin to the diseased condition, & general hygienic condition - Massage - induced current - Arsenic, Iodine, Strychnine. Rule is recovery. If it is reflex, remove the cause. You must always protect the patient's eye by strapping it over with ^{corn} plaster, because being open, dust settles on it. Mucous surface becomes very dry - danger of sloughing of cornea. Some times the 3rd pair is paralyzed. The 3rd (Motor Oculi) supplies all the muscles of the eye except the Superior Oblique & External Rectus. It is turned a little ^{on its axis} but for the most part is motionless. There is a pronounced fact which is the opposite of that in facial Paralysis. The eye is closed (Sis) The upper eyelid falls & the patient cannot open it. Now the raiser of the eyelid is paralyzed because it gets its supply from 3rd pair. The Orbicularis Palpebrarum is not paralyzed & acts as a purse string & closes the eye.

Causes & Treatment. Same as for 7th pair.

Paralysis of 6th pair (Abducens). This supplies only the external straight muscle of the eye, the internal straight muscle being its natural antagonist - you get strabismus. If both nerves were paralyzed, you would have double strabismus. Causes & Treatment Same as for 7th pair.

Neural Hyperæsthesia or Neuralgia

It is not a Pain produced by disease of the brain or spinal cord or any inflammatory processes at any point of the body. It is simply Pain of a nerve itself. Any mixed nerve in the body, any nerve that contains sensory fibres may become the subject of neuralgia. All the nerves that are given off from the spinal cord & certain nerves given off from the brain may be involved. Then we have deep seated, or visceral neuralgia. - Nephralgia - Enteralgia - Gastralgia

Neuralgia of 5th pair - the great nerve of sensation of the face. Gasserian ganglion. Back of this is given off the posterior root which is the nerve of mastication. In front of the Gasserian ganglion, the nerve divides into 3 branches: Ophthalmic, Superior & Inferior Maxillary. The Ophthalmic supplies the muscles of the skin about the face & forehead & clear back to the Parietal Protruberance, the wings of the nose & upper part of the lips. The superior maxillary - all the coverings of the bone & much of the internal structure & the teeth. The inferior maxillary, the lower teeth & parts below. The pain may affect one or all of these divisions at once. But "the brow-ache" refers to neuralgia of the Ophthalmic Division. The teeth of the upper jaw (if neuralgia) "Oontalgia" The mischief is in the superior maxillary division - of lower teeth - Inferior maxillary division. It may be for the most part one branch, supra or infra orbital. You can put your finger on the spot where the nerve makes its exit. The brain is not involved.

Causes Exposure to Cold & miasma (especially for brow-ache) Numberless causes - functional causes. In some cases the condition is so obstinate that only the use of the most powerful narcotics give freedom from pain.

Acupuncture gives relief but the pain recurs in a great many cases. Some cases yield readily, others yield to nothing.

You will ^{always} be able to determine what particular division is involved by the locality of the pain. The pain affects, for the most part only one side "Prosopalgia". There will be no question about the diagnosis.

Treatment Depends on cause. If miasma, give Quinine, Arsenic or Iodine - any of the so-called antiperiodics. You will have almost complete control for the time being; but you can not wait for the slow action of these. - You have all sorts of complications - give camphor & chloral. Use Ammonia or Hartshorn Liniment - Chloroform Liniment - Volatile Liniment - Soap Liniment - ~~Soap Liniment~~ - Mustard Plaster - Heat - Opium, especially Morphine. That controls the pain, but you want to prevent its recurrence, it may be quinine, tertiae &c. Local applications, Pl. Ext. Belladonna

Extract. Hyoscyamus - "Trisphalgia" not toothache but extraction of tooth gives relief.

Classification - See Doloureux & Trifacial (5th pair).

Cervico-occipital - Cervical Plexus.

Cervico-brachial - Brachial Plexus.

Dorso-intercostal - Intercostal Muscles & Skin.

Lumbo-abdominal - Lumbar Plexus.

Sacral - Sacral Plexus.

Sciatic - Sciatic Nerve.

The chief branches which become involved are the Great Occipital branch of 1st Cervical & the Posterior Auricular the back part of head & neck. If it be the Brachial Plexus, in order to know what nerve is involved is to know exactly the distribution. If on the back of hand or arm, it is the musculo spiral.

Treatment Same only use hypodermic syringe, but not about the face. Give $\frac{1}{4}$ gr Morphine & $\frac{1}{100}$ gr Atropine together hypodermically. Get fresh tablets. In all cases of Neuralgia, there are certain painful spots. They are found always to correspond to certain conditions. When a nerve passes through a foramen of bone, it passes from a dense to a less dense ~~tissue~~, or vice-versa, as, for instance, to the fascia. There is more pain also, when the nerve is superficial. In every case, seek the cause.

If anaemia, if patient has had repeated small hemorrhages or if oligoemia then give Iron. If miasma is cause whether periodic or not, give Quinine. Almost specific. After you have exhausted every inquiry to find cause, then give agents which are purely empirical. A Rheumatic diathesis is often associated with sciatic neuralgia. The latter is extremely painful. Give Potass. Bromide, Opium - Morphine & Atropine hypodermatically. Inject 3-5 M. Chloroform. Lodge the Chloroform or Morphine within the sheath of the nerve or in the nerve. Push the syringe straight down. All the whole round of vegetable narcotics has control of neuralgia, especially Belladonna. In some cases it will produce remarkable results.

It gives freedom from pain at the moment & prevents its recurrence. Saturate patient give him belladonna in such quantities until the pupil is dilated & sustain that condition until the pain yields. Use also hyoscyamus & stramonium. Look for rational cause & address treatment to that.

Press nerve & pain disappears — Stretch nerve.

Neuroses. Not able to determine the cause. In one case after death one condition is found & in another — another condition. So we fail to ascertain what is the changed condition in the brain or cord or both, which induces the condition.

Sciatic nerve has been stretched — Lift with lead pencil.

Cocaine, bromides, (facial) Chloral. Potass. Iodide.

Epilepsy All late authorities on epilepsy, make an epileptic seizure to be nothing more nor less than a rapid discharge or expulsion of nervous force from an over excited nerve center or several centers, the symptoms being dependent upon the predominance of motor or sensory phenomena. Pain depends on quantity, number & order of centers involved.

(Called "falling sickness.") It exists in two or three different conditions. In some cases the patient becomes unconscious or he cries out. He is first held in a rigid tetanic condition then falls, then he has clonic convulsive movements lasting for a greater or lesser period of time & then he lies in a comatose or semi comatose condition & by & by he becomes gradually conscious & wakes out of his fit & is wholly unconscious of anything that occurred during the seizure. — Legendre.

Epilepsy gravior — Le petit mal. — In another kind the patient loses consciousness but the attack is not characterized by clonic convulsions. He does not fall. That which characterizes the disease is loss of consciousness, if it be only for a moment. The patient loses consciousness & he is evidently the subject of some abnormal condition, but he does not fall & he is not the subject of clonic convulsive movements. — He has le petit mal.

Abortive or irregular forms. The subject may be talking in an instant he ceases to talk, is unconscious for a second or two & when he regains consciousness even though he be standing

or walking, he halts the moment passes off & he recommences the words just where he left off.

Other irregular forms occur in which the subject of disease is moved to unconscious acts, as running or leaping moving around the room at a rapid rate. If anyone tries to prevent, he violently pushes him away. After a little time the seizure passes off & he is unconscious of anything that occurred. As regards all forms particularly the lighter forms, there is a circle, in which the patient lives the center of which would be taken as the day of seizure. If the seizures were comparatively few, but for days previous & days afterwards, he is within the circle & almost all of the acts for those days prior to & after the seizure he is unconscious of that which he really does.

Causes - Predisposing & Exciting.

Predisposing Causes. Heredity, most marked. It acts in a large percent of cases at least 1 in 3. History of epilepsy in ancestors, & also neuroses. In one generation insanity, in another chronic alcoholism, in another Dementia, in another epilepsy. There is a strong tendency in the phthisical diathesis to transmit the neuroses so that we are compelled to put Phthisis among those diseases which make the transmission of hereditary predisposition to epilepsy practicable. Take 200 or 300 cases of epilepsy & go back to grandfather & grandmother on both sides & you will find in a large percentage of cases death from consumption, insanity, or a chronic hard drinker, again Phthisis more particularly among females. All the neuroses will discover a large percent of diseases, which inflict the hereditary taint upon the progeny. Chorea. Age is another predisposing cause. It is rare that a first seizure occurs in adult life. In 980 cases, the first seizure occurred in 703 cases before the patient had reached the age of 30. - 460 of the 980 had the first seizure before the age of 20. - 511 of the 980 had the first seizure before the age of 25. - Of 1480 cases 665 between 10 & 19 - 427 between 1-10 yrs. - 400 before 20 years - 90 before 50 yrs.

The transition from childhood to manhood & womanhood is dangerous so far as all neuroses are concerned.

Epileptics have seizures generally from 12 to 15 years of age. Chronic alcoholism is an exciting cause with or without pre-disposition. Chronic malarial poison is an exciting cause.

Certain diseases, all acute exanthemata, small pox, scarlet fever, diphtheria. The diseased condition is such as that the nervous centers are predisposed to epileptic seizures. (Bad cranial conformation.) Paralysis often follows diphtheria. (Epileptoid seizures tend to develop into true epilepsy.)

Physical causes. Traumatic - wounds which do or do not include the distribution of some nerve in the injured parts & gunshot wounds produce reflex epilepsy. Injuries of scalp - particularly fracture (by compression). In some cases there is depression of the internal table of the skull. It may be that 12-15 or more years may elapse after incurring the injury. Some forms induced by

Psychic causes. Reflex epilepsy from worms in intestines of children. — Runs in families - hereditary. All the children in one family had epileptic seizures when they had high temperatures. The same thing is true as to the impression made by entozoa - intestinal worms. The irritation is reflected upon the brain, nobody knows how. The child has an organization that responds to certain impressions. (Tonic forms lead to generalization.)

A certain number of epileptics date their first seizure to some fright. (Cause - Habits - masturbation) One epileptic may have a great number of seizures in a week, or one a week, or month, or 6 months or a year. Grave & light forms - Gravior - mitior.

It is said that sooner or later the subject becomes idiotic. Not true - Napoleon & Caesar. — It is in irregular forms, Petit Mal, where observation has taught us to expect such changes in the quality of the tissues of the brain as result in idiocy. It is not the one who has hard & frequent seizures who is most likely to become idiotic. It is the one who has fewer seizures. Every case presents very marked symptoms. At the outset of the seizure if the patient is standing, he will cry the epileptic cry. Not all epileptics do cry, but

when he does cry, it is very peculiar & has that about it, which the ancients used to believe was indicative of the Possession of the devil. The patient is held rigid by tetanic contraction of the muscles. Usually one side has more marked convulsions than the other. If that is the case the patient is pulled towards that side. Rigid, eyes wide open, fingers flexed over thumbs, pale face, after 10-30 seconds, he falls & as he falls, respiration is embarrassed, Pulse is quick & hard, he breathes rapidly. If he bites his tongue, as they often do, blood is mingled with froth escaping from his mouth; because of the rigid condition of the chest, in trying to get air into the lungs, he becomes cyanosed, his face is blue & livid, his whole body blue & ashy. Convulsive movements commence. It may be more marked on one side than the other. He lies so about $1\frac{1}{2}$ minutes, then movements cease. He begins to get his breath better because of relaxation of muscles of chest. The rigid condition passes away, the froth ceases. Pupils begin to oscillate. Then patient becomes comatose. Epileptic sleep 2-3 hours. Sometimes they move about almost immediately after a seizure.

Prominent Symptoms. 1. Loss of consciousness.

2. Pupils at outset almost invariably dilated.

3. Thumbs in Palms & fingers over them.

4. Heart quick 5. Muscles taut

Variety as to severity of seizure - Status Epilepticus. 1000 to 2000 fits have occurred one after another. Danger, even though fits are few & seizure not severe, in interruption of heart action & process of breathing.

Variety as to frequency of seizure. Day or Night Epilepsy. Epilepsy Nocturna in the morning. Night epileptics go on & have seizures for a long time without knowing it & without anybody else knowing it. A certain Frenchman because so many cases occurred in the morning, based upon his own observation, reached the conclusion that all epileptic seizures are matutinal. Diagnosis difficult with first seizure. So many cases are epileptoid. The fits resemble epilepsy. Observe a series of seizures - grave or light forms. If he loses consciousness & hesitates; if he lifts a cup of coffee to

his lips, stops a moment but does not drop it - Abortive form. He is pale, eyelids open, Pupils dilated. Grave sequelae follow that form. Be prepared to know abortive or irregular forms. Treatment. Straphine for tumor &c. More medicines than in any other disease. It is now recognized as one of the most difficult of cure. This is true about it: If you can get the patient to concur with you in your treatment & subject him to rigid dietetic regimen, the chances are that in every case you can decrease the force of the seizures & lengthen the interval between them & in a large number of cases you can interrupt the seizures. The greatest hope of absolute cure would be of some case in which you had made your diagnosis of some existing taint which you could remove. In syphilitic disease of brain, treat syphilis. All physicians use Potos Brom. & other bromides. No patient will be helped by any course of treatment which does not involve many months even years. Begin with Potas Brom. gr XV twice a day for a month. Then increase to 30 grs & increase each month until decided bromism takes place. Increase until you produce acne all over the face & body, loss of sensation in throat, anaemia, general loose condition of tissues. When you get Bromism, decrease dose until the bromism passes away. Continue this treatment for years. It decreases the number & force of the seizures. As soon as bromism is produced give bitter tonics - Tinct. Gentian - Gentian & Colombi, or Gentian & Quassia. If caused by tapeworm remove it.

~~Dr. Ross~~ ^{can} lauds Belladonna. Others don't approve of it. Although Dr H. had good results from it. Combinations of reduced iron gr ii with Puls. Valerian gr i - Take 100 pills, 2 each day. Good results. Afterward added gr iv Belladonna to each pill increasing to 1/2 - 1 1/2 - 2 - 3 gr. Give Bromide gr ii - iii increased to gr vi - viii - x - xv - xx twice a day. Bromide of Strychuine or Sodium. Bromate of Potash used recently with success, gr v - x - ter die. In night form the bromides are ineffective. Give Strychuine by mouth after Breakfast & dinner. Increase dose until you produce tetanic rigidity in muscles of back. Begin with small doses. If plethoric, rigid diet. Put patient under best hygienic conditions. Take patient

away from excitement. Rigid dietetic regimen. Simplest food.
 Go to bed on an empty stomach, especially if a night epileptic.
 Phymosis often cause — Circumcise.
 Uterine disease often cause — Cure that.

Neurosis & Hysteria. Variety of opinions as to cause of hysteria. Some say it is a disease of the brain, others of spinal cord, uterus, ovaries, nerves &c. The ancients thought it was seen only in women. It is not limited to either sex, though it preponderates in the female. It is a functional disease of the cerebro spinal axis, characterized either by special mental states or conditions, or by vaso motor, motor or sensory or by visceral disorders, which disorders bear a variable relation to the physical condition or constitution of the patient. The subjects represent a class of so called sensitives. There is in them exaggerated emotions. The least sensation, justified or not starts into an explosion of emotions. They cry & laugh, cause or no cause. They cry when they ought to laugh & vice versa — Two forms.
 1. Disease finds expression in convulsions. 2. Disease never finds expression in convulsions but in almost continual daily abnormal relations to friends & society, so that conduct is not that which would characterize an ordinary girl. Not every hysterical girl has convulsions. It is largely a question of paralyzed or perverted will. The subject lacks control of will. Her conduct is not consistent. Crying, laughing, convulsions. Conscious — can't control it any more than if it were epilepsy. Make a statement that she will recover soon; she hears it & soon gets well.

Globus Hysteria when patient is in condition to have a fit, needs application of exciting cause, she becomes nervous, chokes, falls over in a fit. This often ends with a passionate fit of weeping. There is great quantity of pale urine; the abdomen is distended enormously. There must be a change in brain, we don't know what. Disease of vaso motor; joints become over filled with blood & diseased. Every nervous disease is counterfeited by hysteria.

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Disorders of sensory Paralysis Paraplegia & hemiplegia
Paresis. Anesthesia, Hyperaesthesia. Algesia Hyperalgesia.
Motor Ability to walk or move taken away. Ability to use
arm or leg taken away.

Disorders of viscera. Stomach (as seen in Globus Hys-
tericus). Intestines. Left ovary pressure on. It is
protean in its manifestations - Pale, anaemic, menstrual
disorders

Treatment. Antispasmodics Morphine gr $\frac{1}{4}$ & Atropine $\frac{1}{10}$ is
hypodermically. Equal parts. Elixir of Valerianate of
Ammonia & St. Leger's Comp. with spirits 3i every 10
or 15 min. - Give nervines. Valerian or Tinct Valerian
or Assafoetida gr iii - V. Or an enema with gr V - XX of
Assafoetida with water or starch water. Between
manifestations of disordered conditions of viscera, between
paroxysms, get patient to control herself. Correct associated
disorders, as menstrual, anaemic, indigestion. Give
Lact. Peptin or Pepsine. Hydrocyanic acid, gr iv - VIII
to girl who ate only orange juice & sugar.

Hysterical tendency to accumulate fat. Control patient's
imagination & will. Get personal attachment of patient.
Hygiene - best. Get patient away from sympathizing
friends. Teach her how to rely on herself. Give Arsenic
& Zinc to build up the system.

Diseases of Respiratory Organs.

Atelectasis. Air first expelled from lobules of lungs & collapse
of lobules. Lungs made up of lobules. Each lobule has air cells
& a bronchiole. Atelectasis - danger to be feared in Whooping
Cough, Bronchitis - Acute & Chronic. Capillary - Catarrhal
Pneumonia - Pleurisy. A bit of mucus is formed &
lodged in bronchial tube which terminates in a lobule. When
air is respired the ball of mucus is sucked back into the tube.
It will go to that point at which the diameter of the ball is
more than that of the tube. Expiration forces out - the air gets
out of the lobule easy. Inspiration sucks it in. There
remains in the lobule only residual air. Residual air is
absorbed in blood. Then comes perfect collapse. If a number

of lobules are involved the breathing space is lessened by cubic contents. That collapsed condition (consolidated afterward) disappears if air gets in. Collapse of one or more lobes of lungs seen in Whooping Cough, Bronchitis, Acute Bronchitis. That condition in which the mucous membrane of the 2nd + 3rd divisions of bronchi are involved, we have Tracheal bronchitis if mucous membrane of trachea is involved, Broncho pneumonia if air cells involved.

Ordinary acute bronchitis bad cold. Both lungs affected but unequally; Lobes also unequally affected.

Causes. Exposure to sudden changes of weather - Predisposition. Condition of Mucous membrane - if inflamed, intense, - hyperaemia of mucous membrane. Papillaries - arborescent in shape, blood escapes & there are little red points on capillaries.

Symptoms. Fever. Temperature increases 1-2 degrees. Sense of weight & stiffness about the chest - Cough - & if laryngitis, lightness & soreness (vesicular murmur) - Tough white viscid mucus - Mucous membrane begins to secrete mucus - Cough gets better - Mucus becomes purulent & fastens itself to side & as air passes out you get ^{sibilant} sounds - acts as tongue of Jew's harp - Get rales - musical sounds of all pitches. Moist rales through viscid mucus - Percussion - natural resonance. Rational signs - Cough Slight increase of temperature & action of heart - soreness - Mucous - mucus pus - pus & dry rales Sibilant thorax or sonorous - then moist rales - expectoration. Duration 12-16-20 days - Punctate spots, Bronchitis may begin in nostrils or it may be bronchitis ab initio.

Cough dry at first & stridulous. Voice may be harsh, after 2-4 days cough changes, & patient expectorates mucus, mucus pus, & then pus. Mucous membrane becomes thickened. It is no longer permeable to air. Patient dies of dyspnoea. In Bronchitis Pain diffused & sore. Inspiration has no effect - In Pleuritis Pain - localized - intense. Inspiration - increased pain. In Pneumonia, Rusty colored sputa - hurried respiration - dullness on percussion.

If inflammation extends into alveoli of lungs, it is easily seen to be Pneumonia.

Treatment - Dovers Power gr X Quinine gr XX -
Hot mustard foot bath - Expectorants - Vapors of water &
lin. or water tar. Into a water pitcher put 3i of light
calined magnesia (to prevent tar from sticking) qtt XV - XX
of Oil of tar. fill $\frac{2}{3}$ with very hot water. Cover & inhale vapor.
Ferraline qtt VI - X on lump sugar. Dissolve slowly in mouth.
also Terebinte ʒ ss - ii in tin cup of water, Place over alcohol
lamp so as to vaporize. Inhale vapor. Syrup. Scillae C.
Syr. Vola - Syr. Specac. - Dr. Opium - gr $\frac{1}{4}$ Tartar Emetic
every 1 - 1½ hours till nausea is produced.

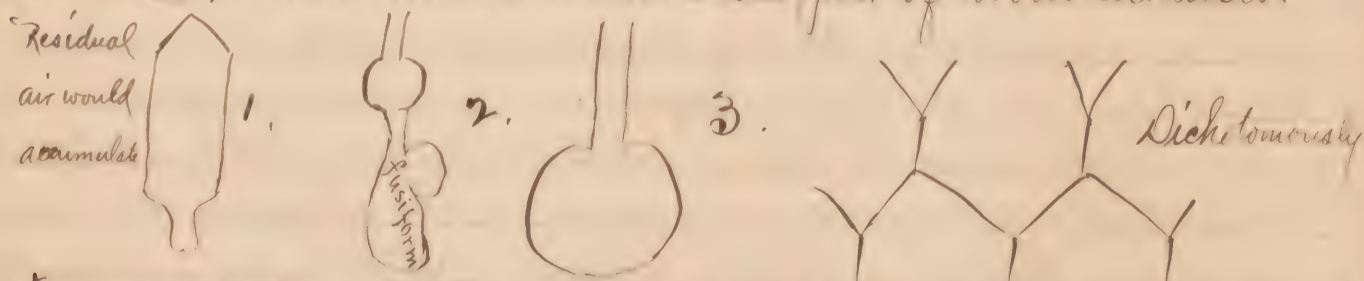
R Tinct. Lobeliae	ʒss
Ammonii Muriatis	ʒiii
Ammonii Iodidi	ʒi
Syrupi Tolutani q.s. ad	ʒii

M. Sig. ʒi every 1 or 2 hours till nausea is produced.

Capillary Bronchitis or Catarrhal Pneumonia.

Inflammation passes to the air cells or alveoli, pulse normal,
breathing increased. Serious trouble - children & old persons.
Same conditions as before, but air tubes narrow. If tubules are
thickened there is much exudation, the air can't get through.
Hard breathing, stooping forward to breathe, - Pale bluish face,
Child undergoing Cyanosis - circulation of venous blood.
Air can't reach air cells to decarbonize blood. Acute bronchitis
may terminate in this, or Capillary bronchitis may occur ab initio.
Intense dyspnoea, listen - bronchial tubes, alveoli filled with
results of inflammatory products. - Now Parenchyma of lungs
involved - Dullness on percussion. If both lungs involved -
extreme. 50% die because air can't reach lungs. Atelectasis
occurs. Collapse of many lobules. Compensatory emphysema.
The lobules left become larger. If disease become chronic & if there
is atelectasis, the lung is wholly spoiled. The interlobular con-
nective tissue also becomes involved. How to know Atelectasis
If process of collapse is going on, get dull note - won't hear air
going in & out. Hear it when it goes into the tubes at one point
but alongside of it dulness. If it has existed long enough you

get tympanic sound. (On one side dullness, on the other tympanic resonance). Suppose lobules in center of lobe; get almost natural breathing on each side. Not natural note on percussion. Tubular breathing with low dull percussion note. Something wrong. History of case. Rational & Physical signs. Look for Bronchiectasis. Inflammation of mucous membrane - 3 forms & 3 results. Trachea & Larynx & Pharynx & Bronchi - Croupous false membrane formed - Larynx & Pharynx - Diphtheritic false membrane formed - Pharynx catarrh (False membrane composed of fibrin). Croupous inflammation lies upon mucous membrane. Croupous catarrh - Croupous bronchitis - false membrane fibrillated. Pneumonia. False membrane fibrillated. Fibrin in Diphtheritic inflammation. Diphtheritic inflammation, in mucous membrane & false membrane formed. Compensatory or vicarious anæmysemia issues on atelectasis. Catarrhal inflammation results in so stimulating mucous membrane involved, that millions of cells are formed & catarrhal matter, is thrown off. Bronchiectasis is enlarged condition of bronchioles which follow bronchitis. It is the condition in which the 4th & 6th & 7th branches of bronchi are involved - not natural in size; get larger as they reach alveoli of lungs. Bronchial tubes divide dichotomously - they never anastomose. Bronchioles become subject of bronchiectasis.



Forms of Bronchiectasis 1. Regularly enlarged, 2. Cylindrically enlarged 3. Sacculated (rounded) extremity of tube imperious to air. Short breath is the result of bronchiectasis. Respiration noisy & wheezy & danger of protracted chronic bronchitis. Gurgling & cavernous breathing in bronchitis found in chronic bronchitis & phthisis. Bronchiole terminates in every cell alveoli, air cells, filled with results of inflammation. The connective tissue of the lobules becoming involved.

Danger of formation of tubercle. Catarrhal pneumonia may result in tuberculosis. - Cheesy - Fibroid Phthisis - Tubercles form from products of catarrhal pneumonia. 50% of catarrhal pneumonia die. - Dyspnoea - all efforts made to get air. Sputa of lungs rusty. - In capillary bronchitis, pure mucus & air mucus-pus, pus. Granular = tough, viscid, globular flat like corn. Another form = tough, viscid, albuminous. Another form = clear, intermingled with pus cells, & shreds of mucous tissue. Inflammation spreads by continuity of surface. Treatment of Capillary bronchitis - Yellow subsulphate of mercury exerts mucus. Dose gr^{ss} - v - Apomorphine prompt but dangerous gr 1/30 - 1/8 hypodermally. Give prompt emetics every time mucus accumulates to prevent cyanosis. Sustain action of heart. Stimulants - Flax seed poultice on chest (wet & hot). Mustard over surface cover whole chest & if collapse put on complete jacket. Change in 6-8 hours. Heart fails, rapid pulse, blue skin, venous narcosis; give alcoholic stimulants, beef tea, egg nog, brandy &c. Also quinine. If decided failure of heart & no marked failure of circulation on left side, give digitalis or digitalin. Danger. Blood fails to get through capillaries. Arterial ischaemia on left side. Venous stasis on right side. In those conditions don't give depressants. Don't give Veratrum or Tincture of Aconite, even though the pulse may be high. Give diffusive stimulants. Carbonate of Ammonia gr^{ss} - v up to x - xv in mucilage or syrup of Acacia every 2-3 hours.

Croupous or Lobar Pneumonia or Pneumonitis

It is a specific disease & a constitutional affection. Lesion Inflammation of lungs, just as inflammation of throat in diphtheria. Self limited - crisis. Inflammation of lungs due to atmospheric vicissitudes. Something back of it to induce pneumonia. That something is in the patient's blood & nervous system. ushered in, in two ways: 1. Series of rigors or chills, general sense of head ache, anorexia, fever, backache. 2. Single sharp chill decided. Begins with chill generally at night. Pain near nipple. Wakes with nausea & chill Reaction. In the 1st case, the patient goes to bed.

Has cough, fever, high temperature, hurried & difficult breathing. The first 36 hours he expectorates white frothy mucus. In the 2nd case, reaction, fever, soreness of chest & lungs, cough, high temperature, hurried heart. Cough in either case restricted. After 24 to 36 hours, fever, furred tongue, often nausea & vomiting (all ages). Pain may be very decided on right side, sputa deep rusty color, mucus commingled with blood. Pain depends on degree of involvement of Pleura. If superficial, Pain acute, if deep, Pain dull & dead, increased by coughing. Right lung oftener involved, oftener lower lobe. Sometimes both lungs. In order of frequency: 1. Lower lobe of right lung. 2. Lower lobe of left lung. 3. Whole of one lung. Occasionally in children the upper lobe of either. Voice sounds in lung. Bronchial voice. Vocal fremitus gone. 65% of cases tend to terminal suddenly the 5th to 8th day - crisis. Temperature decreases suddenly. When not by crisis, there is gradual depression - lysis. Lower lobe of right side; 3 stages. 1. Engorgement, excessive hyperaemia, but it still floats. Red serum exudes with air. 2. Hepatization (red). 3. Hepatization (gray) or purulent infiltration. 4. Resolution. Sometimes Red engorgement follows immediately upon an attack. 24 to 36 hours, then comes 2nd stage. Lung solid - not permeable to air. Often the process is arrested in the 2nd stage & the 3rd stage does not occur. We don't know if any one recovers after 3rd stage. 3rd stage Lung solid, heavy, sinks in water - mottled white spots, globules of pus ooze out - Purulent infiltration, Parenchyma infiltrated with pus. Physical signs - 1st Stage. Not vesicular breathing, but crackling rales. Air cells fall together in expiration & held in by viscid exudation. Vocal fremitus is increased. 2nd Stage. Absolute silence after air cells have been filled. 3rd Stage. Bronchi permeable & air goes in & out of them & you get tubular breathing or bronchial breathing. Tissue solid. Dullness on percussion. Bronchial voice. Solid - better conductor of sound.

Double Pneumonia. At outset sputa viscid, becomes red like brick dust, rusty, very viscid. Rational signs: Pain in proportion to involvement of pleura. Patient lies on back inclined toward affected side. Pulse frequent. If case runs into 3rd stage, can't detect it by physical signs. If patient does not recover by 5th or 8th day, you argue that 3rd stage has come. Great prostration - skin dirt color - Red spot on one cheek. Rational signs continued. Breathing shallow & quick (but patient will say he has no shortness of breath). Tongue furred. Diarrhoea or constipation - Intellect dull, particularly if more than one lobe is involved. Delirium for days. Coma vigil - Body takes position where its weight carried, it because of no opposition by muscles. No muscular resolution. Watch patient. Time involved, & physical signs show 3rd stage has come. Watch for recovery. Watch lungs with ears. If you get crackling râle, lungs cleaning up. Crackling râle in ~~box~~ first - ~~reduces~~ getting better. Vesicular breathing. Sodium Chloride disappears from urine - reappears - patient is getting better. Urine + HNO_3 + $AgNO_3$ - If salt, you get white cloud $AgCl$.

Test urine. 355 in test tube - add gtt i-ii HNO_3 - Pour in solution of $AgNO_3$ - If it gets cloudy there is deposit of an insoluble salt.

"Breaking" Pneumonia. Formed with small pox, measles, Typhemia, septicaemia. Acute Pneumonia is a frank disease. Double Pneumonia - bad prognosis. Lobar. - Lobular in children. Atelectasis is a danger of that condition. It involves secondary lobules, not lobes.

Treatment. Bleeding will relieve arterial ischaemia. 1st stage - Repeat, Quinine gr XV-XX + Morphine gr $\frac{1}{4}$ -ss. Saline cathartics to decrease blood pressure. If depressants are allowable at all give Tinct. Lobelia gtt every 2 hours. Veratrum viride - Tartar Emetic - Flaxseed Poultice during whole attack - Muriate Ammonia gr III-V then Ammonia carbonate gr V every 2 or 3 hours. In childrens hospitals, jacket of oiled silk or chamois & skin aromatic poultice.

sputa rusty colored & viscid.

2nd Stage Sustaining treatment. Quinine small doses or gr XX of Antipyrine. - Diffusive stimulants. Ammonia Carb. - Vinegar saturated to excess with Ammonia Carb. After effervescence give gr iiii - & Ammonia carb. - Excess of venous too little arterial blood. Blood cant get through lungs & damns back on vena cavae, &c. - Dangerous. - Alcoholic stimulants, good food, wine, milk punch, wine jelly, beef tea &c. - Later give Ammonia Iodide when stimulants are no longer necessary.

3rd Stage. Ammonia Iod. very important, clears up lungs & tends to health. Revulsive treatment. Crisis occurs. Cautious stimulation. Lack of arterial blood tends to paralyze heart. Dont give too much stimulation because of arterial ischaemia. Careful feeding & cautious alcoholic stimulation. Give small quantities at short intervals - 1-2 table spoonfuls of milk punch every 1/2 hour. Dont give depressants after lungs are solid; In 1st stage, can give opium, but not after. If restless give chloral but not excessive because it would arrest the heart. Give only gr XX - repeat in 3 hrs if necessary.

Acute Simple Laryngitis Inflammation begins in the larynx - hyperaemia of mucous membrane. Punctate spots. Rupture of capillaries - Ecchymosis in proportion to intensity of inflammation. Intense swelling of mucous membrane over vocal cords, in larynx, trachea, & bronchi. Symptoms. Respiration slower - Hoarse cough & voice - Dyspnoea - Aphonia - Spasms of Dyspnoea - Oedema - Pit over Adams apple. - Paralysis of laryngeal muscles causes spasms of dyspnoea. Tightness & fulness in throat - Pain in talking, breathing, swallowing. (Rare grave disease)

Croupous Laryngitis. True Croup or Membranous Croup (rare) Predisposition to Croup 2 to 6 yrs. Inflammatory Process - initial lesion - hyperaemia of mucous membrane lining larynx. Often excited by exposure to cold. There exists a predisposition also. Children up to 2. Dentition. - Arborescent or stratified

or extravasation of blood in larynx 1. Begins suddenly - Fulminant form. 2. Creeps on - Cough, rough, metallic croupous, aphonia. After hyperaemia has existed a few hours false membrane begins to appear in patches, pellucid. It spreads, coalesces, goes to trachea & bronchi, up to fauces. Dark pharynx - with patches of false membrane. Throat sore. Difference between Croup Local affection, False membrane on ~~mucous~~ membrane; Diphtheria. Constant affection, False membrane in mucous membrane. Croup. Patches, dark, adherent, dirty; other patches light, thin, Does not take epithelium. In diphtheria when false membrane is separated the epithelium goes too. Treatment 1. Nauseants Wine of Antimony, Compound Syrup of Squills, Tartar Emetic, - slight but sustained nausea. 2nd Vapor of water or slaking lime. 3rd Hydragogue cathartics, saline cathartics. 4th Morphine in small doses. - Danger of Cyanosis. Don't cause narcosis (with opium.) 5th Cold or heat about neck or alternating - 1/2 hour between. See below.

Laryngismus Stridulus - False Croup. Spasmodic affection of larynx. Spasm of laryngeal muscles which involve all the phenomena of fulminant croup. Narrowing chink of glottis producing whoop. Child feverish. Spasm often result of reflex action of stomach. Direct impression on nervous system. A few drops of paregoric or chloral will arrest spasm - Often mistaken for croup. - Specac - Turpeth mineral. Towell wrung out of cold or hot water, around throat. Recurs every night or two or in a week. Cold sponge bath about neck & chest. grt - 1/2 of Sod. of soda or Potas. 2 or 3 times a day.

True Croup. (continued) False membrane, more pellucid loosely adherent, or thicker, closely adherent - Sometimes patches. May be 1 or more false membranes. Lips blue, struggling for breath - Prop on pillows can't lie down. Hoarse voice at first - voice disappears when membrane is formed. Crying, free at first - air gets in larynx, which

cant cry after membrane is formed, - vocal cords are covered by membrane. There may be a hoarse whisper. Peculiarity: Dyspnoea continuously marked, every now & then there is spasmodic breathing. Same spasm of muscles as in false croup. Sometimes False Croup is added to True Croup. Some say the spasms are due to paresis of laryngeal muscles. Dr. Wood doesn't think so. Danger Atelectasis - compensative emphysema. Diagnosis easy. Fulminant croup is rare. It jeopardizes life in a few hours. Laryngismus Stridulus occurs often & is mistaken for true croup often. Proportion 10 to 1. Only when dyspnoea is pronounced make diagnosis. If Fulminant - none of the remedies relieve. High Temp. Quick pulse. Two objects in treatment 1. Local. 2. General Constitutional or Systemic. Local 1. Get rid of false membrane, 2. Prevent reorganization of same. Certain solvents are used to act on mucous membrane & disintegrate it. One of the best is lime water in spray or topical applications of lime water hot by probang or swab. Vapor of water (curtains about bed) Or slake lime in large pitcher; plunge piece of lime in water & have patient breathe vapor while it is slaking. Mineral acids have been used. Nitrate of soda. Vinet. Iron is better. Mild agents are better. In true croup or diphtheria nothing is equal to lime water. Some prefer lactic acid & spray or use with Probang. Solution of Chloral grxx to 3i dissolves mucus. It has also local effect on nerves of larynx & arrests spasms. Chloral gr i - V. Ammonia Brom. Ammonia Sod. Cyanosis. Dies by CO_2 poisoning in spasm. Bits of false membrane coughed up. Dyspnoea added to by spasm. Relieved by getting rid of false membrane. Cyanosis, stupor spasm, death. Give emetic to get rid of false membrane. Active sharp, quick emetic. Turpeth mineral. Don't give depressant emetics like Tartar emetic, ipecac, lobelia. May give Mercury - Apomorphine, gr^{ss} Sulphate of Copper. Might use mercury locally. Some blow

oxygen or sulphur through a tube. (Do it doesn't). Cold or heat about neck.) Systemic treatment. Quinine in large doses as in pneumonia + pleurisy. Morphine in small doses gr/30. (Object in this treatment threefold. 1. Get rid of rubeous memb. 2. Prevent recurrence. 3. Sustain patient. Use supporting doses of Quinine gr ii-iii. Give Bromides + Chloral. Give alimentation: Milk punch, beef tea &c. Stop emetics when prostrated. Give Tinct of Iron not typically. Intubation of larynx more satisfactory than tracheotomy. No use to perform tracheotomy if secondary changes carry it to lungs.

Pleurisy. 2 layers Pulmonary layer (red) + Parietal. Exudation + serum secreted by epithelial cells lining Pleura. Pleurisy rarely due to cold, but cold is an exciting cause. Pleurisy is an expression of some cachectic state.

Causes Close sleeping rooms. — High temperature. Inflammation, diffuse or circumscribed.

Initial lesion: Hyperaemic state of membrane. Inflammation arborescent or lines. Blood points (as in laryngitis). Intramural pressure so great that blood is extravasated. Reddish or dark brown. Inflammation rapid. Within 24 hours, membrane swollen, epithelial cells cloudy, swelled, cast off, serous membrane injected, oedematous, migrated leucocytes, fibrine appears on one or both surfaces. If exudation is exclusively fibrine, or fibrine albumen, the inflammation may die out + a dry pleurisy occurs, then recovery. If resolution prompt, little serum, fibrine absorbed, red cells absorbed + get well; or the fibrine glues 2 surfaces together. Dry Pleurisy, little or no effusion. Recovery takes place by coalescence of the 2 layers of Pleura. It often results in obliteration of Pleural sac.

Organization — cicatricial tissue results. Pleuritic adhesions. Dry pleurisy rare. — Acute + chronic.

Acute rarely becomes chronic. Acute Pleuritis terminates in 1. Resolution, 2 Chronic Pleuritis, or 3. Death. Acute Pleuritis sometimes involves whole of pleural surface.

Symptoms (rational) of acute Pleuritis. Rarely anything to indicate its coming. Stitch in side, acute, sharp pain,

circumscribed outside of & below nipple. (Pneumonia, dull circumscribed pain). Dyspnoea more marked than in pneumonia. Cyanosis in a few cases. Increased temperature $101-102^{\circ}$. Quick pulse. Malaise, pain diffuse & sharp, furred tongue nervous cough. Expectoration of flaky mucus. Friction sounds audible as of surfaces gliding on each other. Because there is no marked cough, little expectoration, no dullness on percussion, to & fro sound when exudation is going out, can separate from pneumonia & bronchitis.

Wet Pleurisy 1st Stage - till serum is thrown out. 2nd Stage - till diminution of serum. 3rd Stage Reabsorption. Pleuro pneumonia. Character of pleurisy determined by character of effusion.

Benign Pleurisy effusion - blood plasma qualitatively has physical character, clear, viscid - diaphanous - quantities - few ounces or many pints. Sero fibrinous or Fibr serous. In some cases of Fibr serous Pleurisy because there is a quantity of pus cells or migrated leucocytes making it like pus - effusion whitish. It may be colored by red cells, so that a reddish white cast is given. Alkaline, almost any color from white to dark red. That is not purulent form or hemorrhagic form. The effusion is serum. If the effusion is pus - Purulent Pleurisy. If a large quantity of blood with serum - hemorrhagic Pleurisy. Effusion poured out which is a pseudo-membrane consisting of fibrine flakes of fibrine attached to pleura. They fall into cavity & serum is thus filled with flakes of fibrine or fibr albuminous material. Sometimes on pleura lining upper surface of diaphragm, secondary cavities ^{are} formed - edges adhere. These sacs enclose serum. The serum is poured out in from 24-36 hours. In sub acute or chronic form, patient is scarcely conscious he had it. It is insidious. When serum begins to fill up the cavity, it begins below & gets higher & higher & may fill nearly all the cavity or a level with clavicle. Can measure upper level where serum terminates, all below, dull on percussion, all above, resonant. Somewhat S form, above & below which, sound

Above line of dullness, front & behind, you get great resonance. Why? As serum is exuded, as it collects, it pushes the lung back ward, air is driven out of it & it is useless. - Lung separated from chest wall - Empty cavity between lung & chest walls. Wave motion. (Percussion circumscribed). Hear splash of serum by shaking patient. Serum fills left cavity & pushes heart to right. Ascending vena cava gets twisted on itself. You have venous overfulness of right heart. Intense dyspnoea. Death. If effusion is not purulent or hemorrhagic, the patient may go about with little interference.

Pyo-thorax - Haemo-thorax - Empyema.
 Symptoms of Purulent form - Completely disabled condition. Sleeps with head elevated - Decided constitutional disturbance - Hemorrhagic form - Cause. Rupture of vessels - much blood poured out. If air enters the cavity, the serous effusion becomes pus. Draw off the serum.
 - Next cloudy - nearly pure pus due to presence of bacteria.
 Treatment. Quinine (gr X) large dose with gr's Morphia. Flaxseed poultice covered with mustard on chest. Brisk saline cathartics. Morphine hypodermatically to be repeated if necessary. Not the same danger of using morphine in pleurisy as in pneumonia. Adhesive strips to affected side. Tinct. Aconite. qtt every 3 or 4 hours till effusion has begun. Then give such treatment as will limit amount of effusion.
 Diuretics - Hydragogue cathartics, Jalap & Cream of Tartar. Acetate of ammonia. If these fail, try Muriate of Pilocarpine, hypodermically. Jaborandi in tea or H. Ex. to cause sweating. Pass. Potass. Iodide mixed with Jaborandi H. Ex. Blisters. Anti febrile.
 If purulent: aspirate chest between 6th & 7th intercostal spaces below scapula. Take strong hypodermic needle (to find if pus, blood or serum), & suck out the fluid. If pus, aspirate. No pus will ever be re-absorbed. If blood aspirate. Aspiration safe if precautions are taken. No air or bacteria must get into chest.
 Intercostal neuralgia. Respiration not so increased. Pain intense - no constitutional disturbance, no fever.
 Haemoptysis. Hemorrhage from lungs. Etymologically

means "bloody sputa". Pneumorrhagia. Hemorrhage from lungs. Bronchorrhagia hemorrhage from the bronchial tubes. Hemorrhage may occur in lung tissue & no blood appear. Hemorrhagic infarction due to embolism of branch of pulmonary artery. Plugged from behind with embolus. Blood arrested from in front. Stasis in vessels. Pulmonary Apoplexy (not a good word) bleeding vessel tears apart tissue & blood clots. Hemorrhage is expression of serious coming mischief, due to one of these forms of consumption. It occurs generally in the early history. Hemorrhage from the lungs after the cavities are formed is rare. Once in a while it occurs in later cases of phthisis, then it is hemorrhage of vessel that traverses cavity. Hemorrhage as a rule is from the bronchial tubes. It occurs from erosion of vessel that traverses the cavity from side to side. The hemorrhages more to be feared are those which occur late. Hemorrhage occurs by diapedesis from erosion of mucous membrane. The blood is generally bright arterial blood not so bright as pure, at the moment it occurs it is quite bright. Haematemesis. It escapes differently & has a different color. From lungs it bubbles up generally with air, or with no air like from cut vessels, bright color. From stomach, dark clotted. Quantity from lungs differs, also times of recurrence. Wide range. One hemorrhage only, or every few weeks interval of several months or longer. May be a mere blood stain or half ounce or larger quantity. It seldom compromises life. Might die from suffocation if there was a great deal. One hemorrhage may constitute the whole history - perfect cure, if hemorrhage occurs early & often, disease is prolonged or arrested. Hemorrhage seems some times to be absolute relief. A series of them not necessarily fatal.

Treatment - Perfect quiet, tell patient there is no danger. Keep head neither high nor low. Don't let patient speak or move. Salt - Cold to chest - ice - cloth

wring out of cold water. 1. Shock telegraphed to vaso-motor centers. 2. Control action of heart. (depresses.) Fluid ext. Ergot 3ss. every half hour. Ergotae gr v hypodermically. If heart beats quick & hard, get control of frequency & power of beat. Tinct. Veratrum. gtt i-iii every hour for several doses. After treatment Absolute quiet - mineral acids Nitro-muriatic gtt X-XV in lemonade or sweet water. Alternate applications of heat & cold.

Phthisis. Consumption. There is consuming or wasting away in every case. Every element of lungs is involved. 3. Forms.

1. Caseous. characterized by cheesy degeneration of pre-existing inflammatory processes in the lungs.

2. Subercular. characterized by existence of tubercle from the outset. Involvement of lung tissue.

3. Fibroid, characterized by hyperplasia of pulmonary connective tissue, followed by atelectasis of lobules & deposit of tubercle & destruction of involved portion of lungs. Tubercle result of processes. Danger of caseous

pneumonia is cheesy degeneration of inflammatory products, & their consumption. Catarrhal pneumonia is often so followed. Blood supply cut off from lung tissue & it dies. Tubercle deposited as neoplasm, without pre-existing inflammation, (some say with) It is laid down along line of blood vessels & lymphatics, adventitia & coats of vessels exclusive of terminal arteries. Circulation is affected - blood cut off - It was thought that tuberculosis was associated with scrofula. That it was communicable transferred upon intimate association. Others think it is caused by heredity. Others by bacteria.

Dr Koch made culture experiment. Bacillus tuberculosus needs 100° to propagate, dies in air below that temperature. Inoculate bacillus alone does not always produce tubercle. Contagiousness of tubercle - Fibroid form that which goes on in the lungs is analogous to that which goes on in fibroid kidney, liver &c. No tubercle at the outset. It is the slowest in its march. It may be of 40 years duration.

Galloping Consumption: a few weeks cheesy degeneration - Picture the same in all forms - Symptoms - same Use microscope & brains. If no history of catarrhal pneumonia origin, cough - persistent high temperature night sweat. Tubercular form - no history of bad health. Haaking cough - night sweat - high temperature at night. anorexia dyspepsia - emaciation - expectoration in the morning. Dullness at the apex of one or both lungs. It is in the apices of lungs that processes are most destructive. Apex of lung - left - few more tubercles than in right. Tubercle encroaches on lung tissue, solidifies, dullness upon Percussion, pitch higher. Change going on in lungs, in air cells, bronchioles & interstitial connective tissue. Decreases in size & mass as you come down ^{toward base} larger in apex. Physical signs of Phthisis. Vomical cavities made by cheesy degeneration, Formation of vomical, inflammatory product of softening of tubercle, size of tubercle depends upon size of cheesy or tubercular mass - size of small pea, egg, fist or larger. True tubercular or cheesy matter. Enclosed in cavity, softening taking lung tissue. Some cavities contain central cavity in which others break. Some are simple. At moment cavity is formed its walls are rough, but smooth inside - lining membrane covered with mucus. Pus & traversed by bands of lung tissue, which striate include branches of pulmonary artery. Sometimes severe hemorrhage. continue till cavity is filled. Passes out before anything can be done to arrest it. The largest hemorrhages occur from the new obliterated vessels. Some cavities are filled with pus, mucus, pieces of lung tissue; & bronchi open in them. Cavernous respiration. (small or large) Whistling sound - click. Bubbling, gurgling sound, bursting of bubbles of air in cavity whose walls are solid. Large click (made like sound in Pneumonia) Heard only at termination of inspiration & just before expiration. Solid lung - bronchial breathing & voice. Percussion

on large cavity, get dulness. Get increased resonance only when cavity lays well up to surface of pleura. Cavernous respiration is that fact which qualifies consumption - chest voice. Auscultate larynx & trachea - pectoriloquy, as speaking through material, right in ear. Get pectoriloquy - points out cavity. Other signs, cracked pot sound made by air passing out of chest, when percussion of chest (mouth open) like putting palm together, can't get out if mouth shut. Moist rales - hooting, hissing, howling sounds. Rational signs. Cough - expectoration. Dyspnoea - orthopnoea. Haemorrhage - pain in chest - hectic fever - hurried pulse. Progressive emaciation - night sweats - diarrhoea. Hectic fever, slight or great or no chill in person near death. (Hectic often taken for quotidian ague.) Pulse increased in frequency. Temperature increased $104-105^{\circ}$. Hectic flush in one or both cheeks or alternately. (Late in disease generally, sometimes early.) Drenching sweat at night may come in daytime. Debilitates - sleep sweat from relaxation of sleep. Diarrhoea towards end of life. Hard to control. - Expression of softening of tubercles on intestines. Ulceration. Oedema of feet & ankles, if patient sits up. Heart weakened - every organ becomes involved. Fatty degeneration of liver generally. Pale, whitest, greasy. Kidneys same - amyloid degeneration all over in urine. Conversion of cheesy of tubercular matter into phosphate of lime & thrown off as earth.

Treatment - Prophylactic - curative. Change of climate - For fever sweat. Aromatic Sulphuric Acid qtt XII - XV ter die. Prophylactic treatment. Habitu cold bathing. Pure air & light - Food clothing. Various conditions which lead to consumption. Dyspepsia & constipation. Then give Pepsine or lacte pepsine - Bismuth - Nitro muriatic acid diluted qtt X - XXX before or after meals. Sleep in room without fire.

Curative treatment - Cod liver oil $\mathfrak{z}\text{ii}$ + Sulph. Ether qtt XX - XXX - Cod liver oil + glycerine or + wine.

or rum & dilute phosphoric acid - all sorts of emulsions - phosphites - alone or with cod liver oil, Lacto phosphate, & lime. Lactic acid & calcium phosphate. Equal parts of Ammonium carbonate & ammonium iodide where sputa are large, gr V each in water ter die. Bromides - Potassium bromide especially. Camphor chloral - equal parts of camphor & chloral rubbed together in a mortar - becomes a liquid. If dysphagia or aphonia then use dilute camphor chloral to throat. If ulceration of the under surface of epiglottis apply 1% solution of cocaine on a sponge to throat. In 5 minutes, he can eat whatever he wants. Controls dysphagia. For night sweats use sage tea or atropine gr i - Morphine gr viii, Aqua Zi - grt iv night & morning. arrest night sweats - reduce hectic fever. Quantity of fluid taken in night sweats should be reduced to a minimum. Give cup of strong sage tea. Bathe patient in strong sage tea or gallic or tannic acid. Zinc oxide & sulphate. gr ii or iii & Belladonna. Aromatic or dilute sulphuric acid.

Rx Extracti belladonnae gr ii
Zinci oxidi gr viii

M et fiat in capsulas No viii dividenda.

Sig. One morning & night.

Rest is important - on back in bed. Don't let him go out of doors. Quinine as an antipyretic & tonic. Arsenic - Fowler's solution grt ii - iii night & morning given for months will arrest more cases of phthisis than anything else. Wake at time sweat usually comes on & bathe in tepid water, or sage tea.

Picrotoxin grs o parvule at bed time

Emphysema. - Air where air ought not to be. - is an expression of a lesion of nutrition.

2 forms. Interlobular & Vesicular.

Perforation of pleura & lung, air - gets into cellular tissue - distension of skin. Palpation, feel air - push it out (as water in dropsy).

Air escapes from air cells & gets into connective tissue, binding together the lobules. It separates the lobules, so that they are more distant. You can't determine at what point in the lobule the air escapes. It may be one vesicle & that distends the whole lobe. Air gets beneath the pleura, & gets to the subcutaneous cellular tissue. Pulmonary emphysema gets out through the mediastinum results from interlobular emphysema.

Vesicular emphysema Air cells alone involved, increased in size, larger than peas. Apices & bevelled edges of mediastinum are not supported & are subject to emphysema. In both forms there is atrophy of the cell wall. Weakens alveoli, so as to permit rupture thus communicating with connective tissue. In interlobular emphysema, the weakened cell walls existing (atrophied) then an exciting cause is blowing wind instruments. Chronic Bronchitis is found with both. But after death, lungs spring out of chest walls. In both forms embossments on surface of lung subpleural connective tissue is filled with air. Air bubble beneath pleura.

Symptoms. Interlobular emphysema air between lobules, compresses air within lobules & prevents respiration. Cubic contents of lung decreased - result dyspnoea.

Vesicular, Air in vesicles not susceptible of being expelled - residual air increased, result dyspnoea.

Bronchitis with emphysema causes dyspnoea.

1. Air cells ruptured. 2. Air cells stretched at apices & bevelled edges at mediastinum. Clavicle projects out. - Loughy feeling, apices pushed up.

1. Air in connective tissue. 2. Air in cells distended.

Both incurable

To relieve dyspnoea,

R. Tinct. lobeliae	3i
Ammonii iodidi	3ii
Ammonii bromidi	3iii
Syrupi tolutani	3iiii

M. et fiat solutio

Sig. Teaspoonful every 1-2 hours till nausea.

Orthopnea compelled. Potassium iodide gr XV - XX in syrup ter die. controls bronchitis.

Good food - Sleep in warm room - Dress in flannels. Abstemious life - never eat to repletion, Morphine, but not to narcotism. Tendency to cyanosis. Oil of tar & Magnesia. Set free chlorine in presence of vapor of ammonia. Take 2 saucers, one $\frac{1}{2}$ full of salt. Pour on tablespoonful of Sulphuric acid. In the other saucer $\frac{2}{3}$ Ammonia (aqua).

Asthma - Dyspnoea. Cardiac asthma due to heart disease. Right heart dilated, blood fails to get through to left side of heart. You get dyspnoea - cardiac dyspnoea. Certain odors cause asthma - drugs - ipecac. Asthma spasms of circular muscular fibres of small bronchial tubes. Some class asthma with neuroses. Sudden attacks at night toward morning. Some have prodromata, some none. Symptoms (if any). Headache, Indigestion, Discomfort, Cyanosis, Respiration slowed, Wheezy sound, not like dyspnoea. (Occurs in men oftener than in women; 2 to 1.) Paroxysm dies out after night & day. Serious paroxysm for week perhaps.

Treatment. Change locality & climate. To prevent paroxysm. Potassium Iodide gr V - XV ter die. Bromides & chloral. Strict hygiene required. Sodium Iodide. May be reflex from stomach. Constipation. For relief of attack at the moment smoke Stramonium leaves & Potassium nitrate, mixed with tobacco. Nausea produces relief - stops paroxysm. Lobelia. Morphine gr $\frac{1}{8}$ & Atropine, hypodermically. Depressants & nauseants, Ether, Chloroform, Nitrate of amyl, Ipecac Tartar Emetic, Syrup of squills, Iodide & Bromide of ammonia.

Hydro-thorax. Dropsy of chest. Pneumo-hydrothorax - Pneumo-haemo-thorax. Not the result of inflammation but like other dropsies, as in peritoneum, as results of disease of heart or lungs. Rare except in connection with general dropsy. Causes, same as in other dropsies.

Symptoms. Dyspnoea - both sides involved. Orthopnoea if large accumulation - Dullness on Percussion. Determine upper level of dropsy. Place patient in different positions, serum moves around - Rapid pulse - Cough rare. No expectoration. Case of Bronchitis: Atelectasis - heart has to do increased work. - Hypertrophied right heart - then dilation - then dropsy of chest. 1st Cause. Disease of lungs. 2nd cause. Disease of heart. Treatment. Like other dropsies. Hydragogue cathartics, Jalap &c. - Blister - Diuretics - Tonics, Ferum &c.

Pneumo-thorax - air in chest. It gets there surgically - Emphysema. Gun shot wound - bone pierces chest & wounds lung. Air escapes into cellular tissue. Most marked about the head & chest. Air may get into pleura, because of lesion of nutrition. Erosion of air cells & air escapes into pleura. - True Pneumothorax. Signs - Dyspnoea, Resonance (drum like) on percussion. Pre suppose disease of lungs. Physical signs of disease of lungs. - Rare affection.

Pneumo-pyo-thorax. Air & pus in chest. Rare. Pleuritis pre existing. Aspirate. The serum might burst through diaphragm into stomach.

Pneumo-haemo-thorax. Air & blood in chest. Blood effused instead of pus. Fluid & air - Pneumo hydrothorax. Use hypodermic syringe to get specimen of fluid. Blood comes from new bone capillaries - very fragile, large, apt to break. Can't cure. Es

Emphysema - Compensative or vicarious. Series of lobules collapsed - others enlarged - found where lungs received least support without - under clavicle (apical) & bevelled edges in front.

Vesicular or substantive or cellular emphysema. That in which there is enlargement of air cells, partitions between cells are broken down & cells are as large as walnuts. It occurs as an expression of disease - result of bronchitis - disease of right heart - the blood fails to get through the capillaries - lack of nutrition, atrophy, - adherence of air cells. Strength broken down. - emphysema.

Symptoms Dyspnoea. Cause - disease originating in childhood - sequel often of whooping cough. Rarely fatal. May be one or both sides. Nature changes shape of chest walls - ribs lifted up in front by efforts to get air. Barrel shaped - Wheezy breathing - Expiration prolonged & forced. (When this occurs always disease of lung.) Residual air - nature tries to get it out. Ordinarily inspiration is longer than the expiration. Round over clavicle where air cells are pushed up.

Paroxysmal Asthma. Air gets into connective tissue of lungs - interlobular emphysema. Separate lobules. Lung friable. In connection with it, air gets all over neck & face in cellular tissue, in true emphysema. Emphysema without surgery. Dyspnoea in all these forms. Lobules separated - emphysematous appearance over lungs - pits between them - life intolerable - trying to get air. No cure in paroxysms of asthma - Palliative treatment. Never eat a full meal - Everything that hurries the action of heart causes difficult breathing. Disease of right heart always results. Overfulness of veins. Dropsies. Hypertrophied, then dilated right side.

Person goes to bed in perfect health, wakes with a sense of suffocation - gasps for breath - lasts several hours - (2-6) with or without treatment. Coughs, expectorates, perspires, voids large quantities of limpid urine. No disease of bronchial tubes or lungs or of any viscera of chest. Change medicine - medicine by continued use fails to give relief.

Rx. Ammonii iodidi

Ammonii bromidi aa gr V

Liquor Potassii arsenitis qtt i - ii every 2 or 3 hours. Set Potassium nitrate on fire, fill room with fumes Morphine hypodermically if no disease of lung. During intervals Grindelia robustum (for cough, bronchitis) Live quiet, sober, godly life.

Pertussis. Whooping cough. It is a neurosis - lesion of nervous system - bronchitis with it. Contagious. Childhood.

It begins like a bad cold - Coryza. Paroxysmal coughing, peculiar. A few or many in the 24 hours. Preferably by night. Many cases reverse this. Series of expiratory efforts, so there is no chance of inspiring. After air is exhausted, less residual air - the inspiration & whoop. Spasm of glottis. The bronchitis may be slight or severe. Paroxysms are sometimes so severe that food is rejected, vomiting, cough, cyanosis. (Rare.) If paroxysms are frequent & vomiting also, then condition is grave. Danger of inanition. Indication - feed patient. In some cases there is no whoop - mild. Dangers - atelectasis - expression of plugging bronchi by mucus. Compensative emphysema. It lasts 6 to 12 weeks sometimes a year. Diagnosis easy after whoop comes.

Treatment. \mathcal{R} . Tincturae belladonnae $\mathfrak{z}\mathfrak{v}$
 { For child } Tincturae valerianae
 { 2 years old } Tincturae digitalis aa $\mathfrak{z}\mathfrak{i}\mathfrak{ss}$
 \mathcal{M} . Sig. gtt V night & morning.

Gradually increase gtt & each day until you get marked effect on paroxysm or marked effect of belladonna. For child 2-10 years begin with gtt VI-X doses. Increase morning & evening by gtt II. Spray throat with 2% solution of carbolic acid, especially in adults.

\mathcal{R} . Tincturae nucis vomicae. $\mathfrak{z}\mathfrak{i}\mathfrak{i}$
 Vini ipecacuanhae. $\mathfrak{z}\mathfrak{i}\mathfrak{i}\mathfrak{ss}$
 Syrupi sarsaparillae comp.
 Syrupi senecae aa $\mathfrak{z}\mathfrak{i}\mathfrak{ss}$
 \mathcal{M} . Sig. $\mathfrak{z}\mathfrak{i}$ morning & night.

\mathcal{R} . Antimonii et Potassii tartaras gr i
 Tincturae opii m. xx
 Aquae $\mathfrak{z}\mathfrak{i}$
 \mathcal{M} . Sig. $\mathfrak{z}\mathfrak{i}$ every night.

\mathcal{R} . Tincturae opii
 Tincturae cantharis aa $\mathfrak{z}\mathfrak{i}\mathfrak{i}$
 Linimentum Camphorae Co. $\mathfrak{z}\mathfrak{i}$
 \mathcal{M} . Liniment to back & chest

Alum gr i-x. Tea or decoction of Castanea (3℥ to Aqua Oi.) Fluid extract Castanea 3ss-3℥

Acute Infections or Contagious, Eruptive or Exanthematous Diseases.

Contagious - contact Infections - atmospheric germs breathing air exposed to exhalations.

Fomites - clothing, rags, paper, money, &c. It sometimes remains for years. Each specific pus has power to produce the disease in which it originated. Requires absolute contact. Some acute. Some always have fever. Small pox is the type of infectious disease. Each has its own personal characteristics. (1.) All have a period of incubation - time between taking the poison into the system, & time of showing it. (2.) Each has fever - fever implies increased action of heart - waste of nitrogenous tissues - increased temperature & consumption of water. (3.) Each has its own different anatomical lesion. (4.) Each has its own period of duration. (5.) As a rule they occur but once in a lifetime. (6.) All are peculiar diseases. (7.) Each case produces itself & nothing else. (8.) In each case the smallest particle of poison is capable of indefinite multiplication. Vaccine Old theory - Fermentation set up in blood. Decoction. Nature trying to throw out the poison in exanthemata. No poison - organic or inorganic has power to reproduce itself. Each occurs sometimes as an epidemic, always endemic. No fermentation or decomposition without presence of life (Bacteria) Take cheese, sterilize it - it keeps sweet for ever.

Liebig's theory of animal poisons. Malt in water, (sweet wort) & sugar, Add yeast to get fermentation. Yeast multiplies itself 30 times. Sugar + water + yeast splits sugar into alcohol & CO₂. Sweet wort + yeast splits sugar into yeast multiplied & whole mass is leavened. Same thing in blood. There must be sugar to split into

CO_2 & Alcohol. If it were not for the presence of gluten it would stop there. In blood ^{there is} something analogous to gluten something capable of conversion into poison of small pox, scarlet fever, typhoid fever &c. If so converted & not reproduced, we might say that one attack prevents another. Trouble - no yeast without yeast life.

Yeast has bacteria. No possibility of reproduction without life. Whatever has the power of reproduction is possessed of life. The poisons of the communicable diseases have the power to grow & reproduce themselves, therefore their poisons are possessed of life. Germ Theory of Disease. Now is it that the microscope fails to find them? No - coccus - no diphtheria.

Dr Tyndall took a square box air tight, which he called an air chamber. Boring little holes in the bottom of the box he placed glass tubes in the bottom which were air tight. He took decoctions of cheese hay &c & exposed them to atmospheric air, within 24 hours they were all filled with bacteria. There was life there that did not exist when the things were put in. He says the germs are in the air. The bacteria did not exist in the air but the germ does exist in the air. Bacteria are never found in the air. It is the germ that exists & it is only when it finds conditions favorable to its growth & multiplication that the microscope first finds it. He tries to find if the air contained the germs. Put air under the microscope - no germs found. They are ultra microscopic. Let pencil of light from electric or calcium light, into the box & the air is filled with floating specks that the microscope will not find. Rest will cause the germs to settle down. Put glycerine on inside of box so that germs adhere. Pencil of light - nothing there & optically empty. The air can get inside of convoluted tubes packed with cotton wool. Sulphuric Acid & chalk. Boiling decoctions kills germs sterilizes them. Some take $500^\circ - 600^\circ$ of heat to sterilize them. He carried these boxes everywhere & nowhere were bacteria developed.

Miasmata. Marsh fever, Swamp f., Sierra Leone f., Panama f., Jungle f., found in temperate

& tropical climates. Malaria means bad air. Temp. Dr. Saulsbury, formerly of Cleveland, now of New York, 25 years ago proved germs. Plates exposed same germs as in blood of one with malaria.

Malarial diseases. (1) Intermittent fever. (2) Remittent fever. (3) Typho malarial fever.

Intermittent (Bilious) fever. Intermittent is applied to a fever in which there is a clear, distinct, intermission of all the phenomena. In this fever there is an Aguo. Every day - Quotidian. Every other day Tertian. Every 4th day - Quartan.

Signs. Headache, anorexia, malaise, furred tongue, bad taste, bad sleep, chill.

If quotidian - chill occurs in the forenoon. Patient gets gradually cold. The blood is driven from the surface to the internal organs until he suffers such marked lack of blood that a ring would drop from his finger. Loose flesh, blue skin, congestion, cyanosis, finger nails blue. Rigors but temperature in axilla above normal. Chill lasts 1 to 2 hours, gradually passes off with flushes of heat. - Hot stage (102° - 106°) which lasts about same as cold stage, gradually subsides, then perspiration.

3 Stages 1. Cold, 2. Hot. 3. Sweat.

If cold stage is severe, fever & sweat slight & vice-versa. If tertian, the second day he feels well. If quotidian, paroxysm occurs in the morning. Tertian at midday. Quartan in the afternoon. If the chill anticipate (comes sooner) from day to day, the patient is getting worse. If chill comes later, the patient is getting better. The intermittent form changes to the remittent form by a series of anticipations. If the chill postpones, either the quotidian changes to the tertian or the patient recovers.

Tertian duplicated. Chill in the morning & afternoon of every other day. Tertian duplex chill in the morning of one day, afternoon of the next.

Double Quartan. Fever recurs in seven days or in multiples of seven. Differentiate from early hectic

Fever which has often been treated as malaria. Quinine has been known to suspend the phenomena of hectic fever.

Treatment. Quinine or cinchona given after last paroxysm. Give it in solution (acts quicker) in doses to produce "cinchonism". Add to Quinine, dilute or aromatic sulphuric acid.

Peruvian aque. Give quinine gr XII on well day (gr III every 4 hours). Next morning give gr X about 10 o'clock, if chill is expected at noon, or gr V at 10 & gr V at 11. Boneset tea. Black Pepper gr XX - XXX ter die.

Salicin. Cornine (alk. of logwood.) Iodine ~~or~~ Potass. iodide. Lugol's solution well diluted gtt VI ter die. Fowler's Solution gtt V - VIII after meals.

Remittent form. Hot stages of intermittent form produced (drawn out.)

Treatment of paroxysm. Cut it short if at close of cold stage. Skip hot stage, go from cold stage to sweat. Sometimes the reverse order. Sweat - fever - cold. (Some-sault of phenomena)

Dumb Ague flashes of heat & sweat. Give Morphine as cold stage passes & skip hot stage.

Remittent fever. Intermittent changes to remittent. Sometimes remittent changes to intermittent (rare).

Prodromata. Headache, backache, anorexia, furred tongue, thirst, then Sharp chill, - Hot Stage No sweat. Both kind, occur late in the Spring & late in the fall, generally. Sometimes called "fall fever".

Nausea, depression, hot skin, temperature 102° - 108° hard, full pulse. Scant, dark urine. Temp. up at night, down in the morning, then remission. temperature nearly normal.

Some assume typhoid form of fever. Black, furred tongue, sorbes, delirium, action of heart feeble. Death rate, large. Might be confounded with Typhomalaria.

Meteorismus - gurgling in right iliac fossa. Diarrhoea. Treatment Opium, or Morphine hypodermically. When remission comes give quinine gr X at 7 am. & gr X at 8 am. In evening if fever comes on give opium & then quinine. (May give quinine hypodermically) 3T to Aquat 3T. Dil. sulphuric.

acid MXL. Use not more than gr ii or iii of quinine hypodermically, or give quinine large dose mixed with starch as enema. If Typhoid give smaller doses of quinine, stimulants & nutritives - Anatomical lesion. Melanaemia - deposit in blood & in certain organs, of pigment granules, dark brown or red. In spleen, liver & bone marrow - Melanosis.

Pernicious Intermittent (Congestive chill.) It may occur ab initio or be caused by a series of profound chills. In all forms of malaria there is congestion of portal vein, liver, spleen. No reaction from chill. 3rd Chill - Congestive chill - profound congestion - Blood driven into internal organs. Nausea - Rapid pulse - Coma - Fluttering weak heart - Algid cold stage - Death.

Treatment Quinine - large doses hypodermatically. Prepare at time of using & filter. Give gr X hypodermatically repeat in 1 hour. twice. Use heat - dry preferable. Brandy or Whiskey hypodermically - Cayenne pepper, Dip flannel in Cayenne pepper & dot him all over with it. - Alcoholic stimulants.

Chronic Malarial Poisoning. Symptoms. Melanaemia, Enlarged Spleen, Jaundice. (Spleen - safety valve of portal circulation) Sallow skin. Cerebro spinal axis poisoned, Headache, boneache, backache, Nephritis. Brights disease. Brain & meninges, Heart & Lungs involved.

Treatment. Acetate of Potass. gr XV in lemonade. Arsenic, Iodine. If chronic constipation with Malaria.

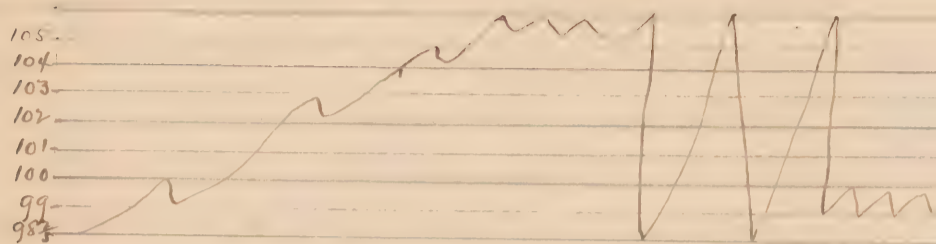
Quininae sulphatis gr XXXii
Hydrargyri chlor. mit. gr iv
Strychninae sulphatis gr i
℞. Div in capsulas No XXXii
Sig. One ter die after meals.

Typho malarial fever Known since the middle of 14th century. Dr Woodward described it in 1863-64.

gave it its name. - Known during the war as camp fever. Typhus means cloudy, smoky. - intellect beclouded. Typhoid-like Typhus. Typho malarial fever is not hybrid - but is the result of the action at the same time of two distinct poisons. It begins sometimes with the prodromic symptoms of intermittent fever - with a series of paroxysms. At the outset it is clear malaria. Remittent form caused by the production of hot stage. Then the typhoid element comes. No remission, no morning depression, or very little - typhoid state, not so grave as typhoid fever. Signs Fever not great. - 102. Sleep disturbed. Thirst. Anorexia. Ulceration of Peyer's patches. Bubbling & tenderness in R. Iliac fossa. Meteorismus (Not very sick) No such results from quinine as in pure malaria.

Typhoid tongue (not always). Pulse small - dicrotic. Intellect dull. Loss of hearing or reverse. Diarrhoea. Differential diagnosis From typhoid - method of accession. From malaria - malarial symptoms changed to typhoid. Ephemeral fever. Treatment. Treat at first for malarial symptoms. - Quinine, cathartic. (Compound cathartic pill) Guard against over-purgation. Then give quinine in small doses. Antipyrene - gr X - XV two to four hours. Anti febrine acts like chloral. Chloral, Potassium bromide, Bromides, food. When you know it is typhomalarial you know you can't break it up. So sustain support. Antipyrene if temp. is 103. Quinine gr II - III every 3 to 6 hours, food, alcoholic stimulants. Control diarrhoea.

Typhoid Fever. (Germ disease) (Jail, ship or famine fever) Access sometimes by sharp chill, generally prodromata few days. Headache, boneache, thirst, backache, anorexia, furred tongue, malaise. Immediate access. Sharp chill or series of rigors weakness sends patient to bed, Constipation but generally diarrhoea. Lasts 21 - 23 days or many weeks. Period of incubation in certain diseases depends upon the number of germs taken in at the beginning.



Thermogram
found in
typical cases.

If not thermogram then there is complication at the outset Delirium at end of 1st week at night. Temperature slight rise in evening, very slight depression in the morning, rises more in evening & falls only part of a degree in the morning. At close of 1st week temperature reaches maximum, say 105° or 6°. Decline in morning not marked, - See saw continued fever. Meantime at the outset there is hyperaemia of mucous membrane of small intestine which is thickened, but no involvement of glands. After a few days the glands swell above level. They undergo medullary infiltration (Dittus). This occurs at the caecum coli and extends upward into ileum according to gravity of case. The worst changes are at the ilio caecal valve. The long axis of the patch, coincides with the long axis of the intestine. Solitary glands hypertrophied. Signs Epistaxis. Gurgling in R. iliac fossa - Meteorismus - Furred red pointed tongue. Necrosis of Peyer's patches & medullary matter discharged. Ulceration - ulcers rest on hyperaemic membrane. The hyperaemic condition of the mucous membrane, dies out generally. Then you find maximum process at caecum coli - & in all states of ulceration. Medullary infiltration, necrosis, healing tendency, resolution. Second week.

Rapid pulse - Temperature at maximum - Tympanitis - Diarrhoea of peculiar characteristic color. Skin dusky, cloudy, smoky. - Intellect dull. - semi-coma. Tongue enlarged, furred, fissured & coated. Delirium - low muttering at night rarely wild. Watch patient. He often gets up, dresses & goes out of room. Maximum condition at close of 2nd week. Third Week Deepening of symptoms, Tongue, if

Previously coated, becomes cleared, is shiny, varnished, fissured, edges indented. - Delirium. - Coma Vigil - Cephalalgia. - Subultas - Tendons Jerk - Rorsal Decubitus - Slides to foot of bed. - About the 5th or 10th day watch about the umbilicus, find 1 to 12 red dots like flea bites - disappear on pressure. These are pathognomonic of typhoid fever. Sometimes these are watery blisters (Sudamina) particularly in perspiration. Sometimes the two kinds exist together. At the end of the 3rd week the temperature drops to or below normal - but is as high as ever at night, next morning - down, several sharp seesaws - then stays down - recovers.

If declination is in middle of case, there is mischief, - Lungs involved - or ulceration of muscular coat of intestines - Perforation - or it may mean hemorrhage from bowel in 1-2 hours. Diagnosis easy.

History of case - Length of time - Coating of tongue - Predisposition to diarrhoea - Temperature.

Prognosis depends on symptoms. Attend to temperature record. Case never utterly hopeless. - In direct proportion to rational symptoms. All the organs & tissues of the body undergo the degenerative process called cloudy swelling particularly the spleen. The heart softens. After death the heart is decreased in size, because the heart is a muscle, it loses its resistency. Perforation may take place in cases that seem to be mild. Perforation may be recovered from. Signs - Drumhead tympanitis - Meteorismus - Pulse increased in frequency but decreased in force or power. Intense Pain - Restlessness - Collapse - For Meteorismus use compresses of hot water.

Complications Erosion of vessels in Peyer's patches - Hemorrhage - Shock. - Prevent movement of bowels (Splint bowels).

Treatment - Varies widely. Opium gr $\frac{1}{2}$ - 2 Ext. Plumbi Acetas gr $\frac{1}{4}$ - $\frac{1}{2}$ every 2 hours. Alcoholic & diffusive stimulants. Be governed in amount of stimulants.

by effect. Specific: Mercury⁽¹⁾ Iodine⁽²⁾ Cold Nat⁽³⁾
 A large % recover by mercuric treatment. Treatment
 rational & expectant. Cathartic dose of Calomel, repeat
 every day for 3 or 4 days. Tinct. Iodine or Potass.
 Iodide or Lugol's Solution qtt ii-v every 2 or 4 hours all
 through the case. Tinct Iodine & Carbolic acid.
 Lugol's Solution ʒii Carbolic Acid ʒi Glycerine
 qtt ii-v every 2 or 6 hours throughout the case. The
 disease is self limited. It runs its course. Can only
 alleviate & support. Meet complications, control de-
 lirium & give sleep. Whoever fails to sleep will die.
 Chloral Potass bromide - Bromides grs ii-xxx. Stimulants
 Don't give Castor oil or any Drastic cathartic at beginning
 Calomel gr ii-iii if at all - Enema of warm water.
 Fall or Winter Fever. Antipyretic Plan. Hospital
 Plan. Submerge in bath at 95° & keep in 30 or 40 min.
 till water gets not below 65°. Quinine in antipyretic
 doses. Antipyrene - Antifebrine. Quinine in tonic
 doses all through fever every 3-6 hours. Sponge body
 with cold or tepid water. Ice & water - all gradual wants.
 Water is the great dietetic, it dilutes the typhoid poison.
 Milk or Milk & Lime water. 2-4 pints in 24 hours. No
solid food. Farina puddings. Alcoholic stimulants.
 Decrease temperature. Head low if heart is weak,
 lift feet. 1 Pint of brandy in 10-12 hours. If diarrhoea
 4-5 discharges in an hour give chalk mixture -
 Camphor & Kauchum. For hemorrhage give brandy
 & milk & vegetable astringents - Astringents & opium,
 or gr i-ii Opium or gr i-iii Plumbi acetas.

Measles. Rubella Morbilli. Acute infection.
 Period of incubation 10 to 12 days generally. Extreme
 cases 7 to 15 days. Wide latitude to period of incubation
 Good reasons for it. Period of incubation - Period
 from date of receiving poison in blood till it shows itself
 Stage of invasion. One of the most contagious.
 Difference in degree of receptivity of poisons of different

diseases in different persons & same persons at different times. (Not h will take scarlet fever). Disease of childhood greatly. One attack guarantees against another, many exceptions. Nursing children rarely take measles or scarlet fever. 2, 8 & 10 years susceptibility greatest. Invasion Sharp chill or chilly sensations, muscular soreness. Same for all fever. Pain in head &c. general discomfort. 1st Catarrhal stage. like bad cold. Bronchitis, cough, expectoration of tough white frothy mucus. red conjunctiva mucous surface of mouth, pharynx & trachea red, Patient sneezes often. Temp. 101°. Lasts till 4th day when stage of development is attained & eruption appears, Sometimes 6th or 7th day (One case 8th day) or even 9th day. Eruption on face first, then on chest arms body & legs. Eruptions rose color, spots lenticular. Quantity varies, Scant, or covers whole body. Spots large as a pin head. Each spot rests on sound skin, slightly elevated. Press out color, it reappears immediately. In 48 hours, body is entirely covered. It stays at ^{its} height 24 hours & lasts from that to about 5 or 6 days. Sometimes eyelids & face oedematous, eyes partly closed. Features distorted. Eruption is above surface, feels rough (Scarlet fever smooth skin; small-pox very rough) Temp. unaltered 101, 103-106. Symptoms aggravated. At end of 72 hours eruption over the person. It remains 24-36 hrs & declines on face &c as it appeared. All goes in 24 hrs. Sometimes formidable in an adult. Bronchitis accompanies it; Pneumonia a danger. Kidney involved. Acute desquamative nephritis. Eyes. Constipation (generally) or diarrhoea.

Hemorrhagic Measles, French or Black, Eruption very dark. Rupture of capillary walls on skin. Poison great (same in scarlet fever & small-pox). Grave form. Danger. Retrocession of eruption. Eruptions laryngitis a danger. Spots arranged in crescents over body. Prognosis favorable. Treatment. Isolation. Keep in proper temperature.

& let it alone, If grave it leaves sequelae. Bromide gr V-X & Chloral gr IIss & at night. Guard against currents of air. Keep room moderately dark. Temp. 70°. Fill room with steam. Retrocession of eruption very sick. Moderately warm bed. Perfectly ventilated room. No allay temperature, nervous irritation & control Bronchitis.

Rx	Tincturae aconiti	3i	} Give all through attack.
	Extracti ipocacuanha fl.	3ii	
	Tincturae opii fl deod.	3iii	
M. Sig.	gtt V every 2 hours.		

Rx	Vini antimonii	3ii
	Spiritus aetheris nitrosi	3vi
	Tincturae opii deodoratae.	Mxxx.
M. Sig.	gtt XV-XX	

As soon as eruption comes, smear body with vasoline, or Glycerine 1 part, Rose Water 2 parts, or with lard to allay irritation, reduce temperature, & help desquamation. Large doses of quinine. If very rapid pulse give digitals. Guard against atmospheric changes until skin is smooth. Pure air. Eruption sparse crescentic - papular. Scarlet fever - Uniform - not raised above the skin. - darker - no crescents.

Small pox shot beneath the skin. Pox
Roseola though not so bad, temperature not so high particularly bronchitis not so bad.

Rx	Vini antimonii	3ii
	Spiritus aetheris nitrosi	3ss.
	Tincturae opii deodorata.	3ss
	Syrupi tolutani q.s. ad.	3ii
M. et ft	solutio	

Sig. Reaspoinsed every 2 hours. Through stage of eruption. Acts on skin & allays cough.

Small-pox. Acute infectious diseases all exist as epidemic or are endemic. Small pox is one of the most contagious disease. Hardly 1 in 1000 would escape unless protected. Period of incubation 10-14 days.

6 to 18 extreme - 17 to 24 hours average in London. Nothing to indicate the disease. Stage of invasion ushered in by a sharp chill violent pain in the back. At the end of 6 hours or 3 days, the eruption appears. At first the spot is a Macule, then a Papule (elevated above the surface imbedded in skin - feels like shot.) then Vesicle, then Pustule. After chill, high temperature, bounding pulse &c. The temperature measures the gravity of the seizure. If bad attack - 103° - 105° . Action of heart rapid. Eruption on edges of hair, face, scalp, cheeks, then over the body. It changes in about 3 days. In a few hours the macule becomes a papule, then papule becomes a pustule which matures. The points coalesce & mature the 6th or 7th days. Peculiarity. As soon as the eruption appears, the temperature, headache &c., all disappear. Not an easy case. Small-pox is discrete; confluent, Cymbose (broken down vitality - rare) hemorrhagic (most fatal). If the eruption is perfectly confluent, the hemorrhagic disposition is added to it from bloodier &c. Pus cells & red blood cells in pustules or so many that their bases coalesce. Discrete - Pustules are near with spaces between. Matured - Entire skin covered. Vesicles (pustules) apt to form over sweat glands or hair follicles. Erupt pustule is umbilicated - Peculiarity of small-pox. But that does not occur in confluent form. In graver form the subsidence of temperature does not occur. Sudden rise of temperature - secondary fever - Constitutional infection. All the phenomena of Pyaemia. No disease with higher temperature 108° to 109° . Not confined to surface. Pustules form in mouth, on eyelids, conjunctiva, Pharynx, larynx, & bifurcation of trachea. All the way on the mucous membrane from mouth to anus. Signs Fever, quick pulse, headache, anorexia, Thirst pain in loins, mental incapacity. (Maximum of death 8th to 10th day.) Intense hyperaemia, infiltration, oedema, eyes closed, hemorrhage from throat. Sore throat in graver forms. Cough, Pustules break. Secondary fever (1st to 8th day. 12th day desiccation begins & goes on till the 20th day when desquamation. At the end of 3 weeks (25-30)

whole skin sound. Discrete form. Marked pitting. Self limited disease. Period of eruption: Face, flexures of elbows wrists & so on. At end of 24 hours whole body covered.

1 Macule - feels like shot. Joints near together.

2 Papule Macule becomes large & hyperaemic. Above surface (end of 24 hrs)

3. Vesicle - On each papule is a vesicle - end of 48 hours.

4. Pustule. End of 5th day from beginning of eruption.

Gravity of case depends upon quantity of eruption. Rim elevated, center depressed. Umbilicated Pustule, Nothing like it except vaccine. Some pustules appear like that all the way through. Most marked as vesicle passes into pustule.

Discrete. Eruption comes, temperature drops, about 6th-8th day of eruption (when maturation occurs) there is a sudden rise of temperature to old line or higher. Secondary fever.

Dessication, Stage of efflorescence on mouth, pharynx, larynx, bronchi & larger bronchial tubes. Sometimes on stomach.

Bronchitis. Only rounded joints in throat. If much in throat there is bleeding. Oedema of glottis. Laryngitis, Pharyngitis, pan ophthalmitis. All organs are involved.

Changes due to poisoned blood. If eruption is on palms of hands & soles of feet there is most severe pain (Inflammation of dense structures) Severe pain. Face swelled so as not to be recognized. Eyes closed. Tongue swelled & protruded, Mouth open. Ears swollen.

Treatment. Specific. Sodium sulphite or sulphocarbolate gr X - XX of either every 3-4 hours.

Rational Support from outset. Reduce temperature.

Bromides or Chloral - Opium. Morphine hypodermically. Don't give Chloral after pustules are in mouth.

Ectrotic. Break up vesicle & prevent pitting. Needle through base of each vesicle - Argent. nitras - Use unguents.

Cloths saturated with cold water; Or with Prepared chalk + bismuth + glycerine. Change cloths every 15-20 min.

Use copperas as disinfectant in all vessels. Hair falls out so cut it off. Ammonium carbonate is almost a specific especially in the later stages. gr iii. viii every 2-3 hours. Alcoholic & diffusible stimulants, Isolation.

Remove all upholstered furniture. Carpets, curtains &c must be replaced by paper. Burn handkerchiefs used. Deodorize & disinfect the mouth. Use gargle or mop. Labarraque's solution. Swab out mouth & pharynx with a cloth dipped in it.

Varioloid Modified small pox. The small pox is modified because of vaccination, or constitutional peculiarities or ancestry. Points of eruption abort. Treatment same.

Varicella, Little small pox - chicken pox. Children generally. Mild - very contagious. Period of incubation 10-14 days. Slight fever - rarely a chill. Headache, thirst, anorexia, malaise. Eruption on back first generally. Little vesicles - watery blisters, pinhead to pea in shape & size. Sometimes coalesce & one as large as a 10¢ piece. The vesicles look as though you had thrown boiling water on skin with crust. Blisters contain lymph, pus, migrated leucocytes, &c. Slight mark left.

Treatment Isolation - Simple diet for a few days.

Cathartics if necessary. Antipyretics.

Vaccination (vacca - a cow) (Vaccine - cow-pox)

Vaccination - process of transferring cow-pox to the human subject to prevent small-pox. Homeopaths object to vaccination & there is a tendency among the laity generally to disbelief in its efficacy caused by a misunderstanding of what Jenner & his adherents claim. In 1768 in Gloucestershire, England, a student of medicine, Edward Jenner, observed that there was a popular opinion, a legend, that the persons who had taken cow-pox from the cow (the milkers) were protected from small-pox. He investigated the subject, made series of observations. In 1798, he made public his discovery that cow-pox protects from small-pox. Jenner did not believe that every case of vaccination protects from small-pox, but that it protects just as much & no more than small-pox itself. Jenner said, "I believe that vaccination efficiently practised will prevent the recurrence of small-pox just as much as the disease itself. I never expected more. I never claimed more & I believe it will do so much." Old manner of vaccinating.

Take humanized virus - virus passed from cow through several human beings. From Jenner's day to 1840 human virus was used. Scrape the arm or other part of the body late bare a raw (absorbing) surface. Use a dull lancet to remove the cuticle. On the bare surface put the vaccine lymph. If you scarify the surface the capillaries break & the blood washes away the virus. Wait 24 hours nothing happens. On the 3rd day there is a papule. 4th day, a vesicle of peculiar appearance. 5th day, a very distinct vesicle umbilicated, feebly luster, larger. 7th day, vesicle complete full rounded, more feebly luster, more above the surface. 8th to 10th day. Around base of vesicle, areola infiltrated, hard, red at base. Through areola with vesicle in center (8th to 10th day) is the evidence of complete vaccination. Constitutional Symptoms. Fever, thirst, anorexia, cephalalgia.

Bovine virus is used now. The same steps occur only the processes are delayed 2-4 days. The vesicle forms the 12th to 15th day. Desiccation, scab, leaves pits. All the vaccine in the U.S. was obtained originally from Beaugency in France. A case of cow pox occurred there. Dr. Martin of Boston got vaccine from that case & it has been supplied from his vaccine farms to all parts of the U.S. Sometimes the glands in the axilla are enlarged or the arm swells. The constitutional effects are decided if scrofula exists. Vaccine lights up the scrofulous diathesis. The effects are not due to bad virus, nor should the physician be blamed. Bovine virus sometimes takes life. Lymphangitis (glands inflamed) fever, arm may slough at point of vaccination. Bovine virus produces more marked constitutional phenomena than does humanized. One vaccination does not always protect. Persons having 2-4 vaccine scars were 98% protected. They are protected in direct ratio to the number of vaccination scars. Vaccinate at several points near together. The protecting power runs out. Vaccination protects by modifying the disease if not by preventing. Rules to be observed 1. Always vaccinate children young, under 6 months - 3 months.

2. Never vaccinate when there is the least kind of other eruption.
3. Vaccinate generally when there is any small pox in vicinity.
4. Never vaccinate a pregnant woman.

Rip tip of vaccine point in the least drop of water. Spread lymph without really wetting it, over abraded surface. Let it dry. Rub it over & over until all the lymph has been transferred, letting it dry each time. After drying the last time put on a piece of isinglass plaster. Have the child's mother take it off, the next day but one, by moistening it. Wrap arm in linen.

Scarlet fever. Draw finger over eruptions - leaves a white line, which lasts sometime.

Scarlatina, Simplex - Anginosa (throat trouble pronounced) - Maligna. Scarlatina is scarlet fever. It may be most trivial or deadly. Sometimes all the cases in an epidemic are mild, sometimes deadly. It occurs as an epidemic every 4 years & is very contagious. Sometimes it is sporadic, lacks power. Characteristics Eruption, throat trouble. It is an affection of childhood. Susceptibility dies out with advancing age. Nursing children rarely take it. A nursing child had abscess of middle ear - Otitis. Some persons have sore throat only. Children 1 to 8 years.

Period of incubation 2-6 days. 1-15 extremes.

Period of invasion. Symptoms. Chill or series of chills or rigors - convulsions. Nausea & vomiting (give Carbolic Acid) - Muscular soreness - Cephalalgia. Backache. After 48 hrs the throat gets sore, flush on skin. On chest & neck, first, flexures of limbs then cheeks &c quickly over body. The eruption may be sparse one day plentiful the next, or it may shift from one part of the body to another. Eruption appears the 2nd or 3rd day. Eruption will disappear & reappear up to 15th day.

(Maximum color & quantity about 10 P.M.) The person looks like a boiled lobster. If sparse, the eruption is punctate. Sometimes raised a little above the surface. If characteristic form there is hyperaemia of skin with distinct red dots over it. One uniform scarlet blush, minute points, red & slightly elevated. No sense of roughness to hand & yet not the smoothness of health. Some don't have trouble in throat. There is no distinct line between the forms of scarlet fever. In

Anginosa, the throat trouble is decided, but not so Maligna. Mucous membrane of throat dark (Tonsils first) fauces are involved, Parenchyma of tonsils, sub maxillary, sublingual & cervical glands. Phlegmonous inflammation - Parenchymatous inflammation - swelling with infiltration, inflamed glands suppurate, pus burrows, throat enormously swollen. Evacuate pus as soon as you know it is there. It erodes small openings 20 or more. Beneath the skin is a whole layer of pus. The pus burrows into sheath of sterno-cleido-mastoid muscle. Neck perforated - Braun's neck.

Symptoms. Spasms - one or many. nausea & vomiting 50% have these. The diagnosis is generally made by latency. Stage of eruption follows quickly the stage of invasion.

Scarlet fever sine eruptione - Scarlet fever latens - occurs in grave cases. In the malignant form the vitality is crushed out. There is no time for ordinary symptoms. Blood poisoning, convulsions - heart failure Death. Temperature high - 108-112. Highest of all diseases. Not the same significance in other diseases. Pulse rapid - 130-40-60. No measure of gravity of case.

Treatment. Mild form needs no treatment. Belladonna is homoeopathic specific. Germicides Sodium carbonate & sulphocarbolate. Isolation. Disinfection by copperas & chlorine. Support from outset. Prevent complications.

Aconite Tinct. grt 1-11 every 3 hours. Large doses of Quinine if temperature is excessive. Morphine. Sponging with hot or tepid water. Sprinkle sheet with Carbolic Acid & hang before the door. Anunction of skin with glycerine & rose water. Bathing twice a day.

℞ Acidi salicylici	℥ii
Tincturae aconiti	℥xii
Spiritus ammonii aromatici	℥iii
Infusi digitalis	℥iss
Syrupi aurantii	℥ss
Aquae	℥i.

M et ft in mistura. Sig ℥i every 2 or 3 hours for child 5 yrs old

Ice or snow to throat. Paint with Iodine, Throat wash
 Acidum Carbolicum. — Terebinthina — Sulphur. Chlorate
 of Potash. Tinct. Ferri Chlorid. $\text{Zi} - \text{Zii}$ in pint of water
 for gargle. Quinine gr XX. Preventative treatment
 Belladonna. Give constantly to drink Chlorate of Potash
 mixed, Put into pint glass stoppered bottle. Potass. chloratis
 gr VIII — Pour on it Strong Hydrochloric acid Zi & cork
 immediately it effervesces & chlorine is set free. Keep corked
 till effervescence subsides. Add Zi of water at a time &
 shake, until ZXVI have been added. Give patient the
 whole amount in 24 hours. To child ZiV every 2-4 hrs.
 Throat affected. Chlorine disinfects the throat & blood. It
 is almost a specific. Apply $\text{Zi} - \text{ii}$ Labouaques solution
 (Liquor sodii chloratis) Put in teacup full of water & sponge
 throat every one or two hours. Give quinine in tonic doses. —
 Alcoholic & diffusive stimulants. Ammonium carbonate.
 Nutrients, beef tea (home made) Wine whey — Sieve out caseine
 from 1 pint of milk, soured. Port wine — scald. Give anti
 pyrine gr XV-XXX — better than quinine — Keep patient alive
 10-12 days & the fever will eliminate itself. Examine urine
 daily. Acute desquamative Nephritis associated with Scarlet
 fever. Signs pronounced headache & disordered vision, restless,
 delirious, coma, Guffy about eyelids ankles oedematous,
 anorexia. Tubules at outlet, at first involved. Water in urine
 decreased. It accumulates & produces dropsy. Find Albumen —
 Examine deposit from urine to find out whether tube casts or
 epithelium. Tubular nephritis — large quantity of urine
 examined. Get hyaline casts, granular casts leucocytes
 & tubular epithelium. At first only hyperaemia of kidney
 then tubules all inflamed, then tissue outside of tubules. Tubule
 closed. Desquamative nephritis (or tubular) bright red
 or scarlatinous kidney. Test for albumen every 24 hours. Use
 microscope to see if you get tube casts & epithelial cells. It
 assumes no importance ordinarily until convalescence. Drop
 sical, doesn't sleep well. Indigestion. Presence of Albumen
 & epithelium in urine. Guard against cold. Intimate
 sympathy between skin & kidneys. Cold in skin kidneys restored.

Acute Bright's disease. Protect from cold. Uniform, rather high temperature. Put on flannels - apply turpentine stupes to back to decrease quantity of blood to kidneys through renal artery. After it reddens skin, remove & repeat in 6-8 hours. No blistering - blisters produce temporary albuminuria

Rx Tincturae ferri chloridi ʒiij
Acidi Phosphorici diluti ʒss
Syrupi limonis q.s. ad ʒiij

M. Sig. ʒt in wineglassful of water every 6 hours.

Sequels of Scarlet Fever. Otitis - Dropsy. Dropsy follows mild cases as well as severe. Saline & hydragogue cathartics. Wrap up in wet sheet & blanket. Sweating. Pilocarpine, jaborandi or elaterium gr. ʒss - Water in quantities if kidneys not choked. Warm baths. 100° increase to 110°. In scarlet fever to arrest nausea give

Rx Cerei oxalatis ʒv
Codeia gr. ii
Saccharati gr. xx

Misce et fiat Pulvis in chart. no. v div.

Sig. One every hour till nausea is allayed.

Best to give it in shaved ice or snow in a spoon.

Preventive treatment. Rx Extracti belladonnae gr. ii
Glycerinae

Aquae cinnamomi aa ʒss.

M. Sig. gtt i for each year of age, ter die.

Diphtheria. Self limited. Due to a specific poison. Period of incubation 4-7 days. No eruption. Children generally - 2-5 years. Symptoms White, dirty yellowish patch on tonsils &c. Sometimes false membranes in larynx. Cyanosed. Same symptoms as in croup - orthopnea. Local lesion in throat. - Fever, chill or series of chills. High temperature not very marked. In throat on dark brownish red base, on posterior wall of Pharynx, on tonsils & pillars of fauces are seen small whitish specks. Roundish epithelium on fauces, thickened, swollen & begins

to be thrown off. In afternoon joints are spread & membrane is forming. New spots form. In 24 to 48 hours by coalescence of spots, pillars, tonsils, soft palate are covered with false membrane. Differs from false membrane of croup. In diphtheria it goes deep in the mucous membrane. When it forms the whole of the posterior wall of the throat is covered. It is thick, tough, reddish, lightish owing to fibrin, red blood cells, - pus. Fibrin base,

migrated leucocytes, red blood cells. Immense numbers of micrococci which are very refractive. Part of the membrane may be thrown off. It may be on lips, may go through posterior nares & be on nostrils or go into ear, or ~~into~~ ^{into} larynx as far as bifurcation ^{of bronchus}. Surface from which epithelium is thrown off, is denuded. Inflammation involves mucous membrane, sub mucous tissue & garrotes that membrane by squeezing blood-vessels from below, & we have gangrenous forms. Temperature low 102-3. Pulse not quickened. Skin not very hot.

Forms of inflammation. 1. Catarrhal. If not assisted passes to diphtheria. White spots in throat. No constitutional symptoms. 2. Croupous - Dirty white false membrane on fauces. Fibrine, leucocytes &c. Constitutional involvement.

3. Septicaemia. Prognosis always bad. Croupous. 4. Gangrenous. (Rare) In which there is gangrene of the throat because the exudation lying in the sub mucous tissues, presses the blood vessels & cuts the blood off & then death takes place. No recovery. Ordinarily when the false membrane is but little formed you will find it in connection with moderately high temperature. Temperature 100 1/4. Thirst. Headache.

Constitutional, re-muculation - septicaemia. Thready low pulse, delirious - cool skin. Sudden fall in pulse. Mischief reabsorption of the septic matter from throat into blood.

Either the disease is a blood disease & the throat affection is secondary to that or it is first a local disease & then there is constitutional infection afterwards. I believe that it is always a local disease at the outset & that if you, by any possibility destroy the micrococcus in the throat & prevent its burrowing & communicating to the blood & multiplying & taking up those elements that ought to go to the sustenance of the body, you

could save your patient's life & cure diphtheria. I have in a hundred cases arrested the disease in the throat locally & thus arrested the disease thoroughly by the use of *Sinclair's Ferri chloride* & *Potassium Chlorate*. If the child be young it cannot gargle. Sponge out every 2 hours. Use the iron pretty strong. Don't expect the same effect from that applied after false membrane has formed fully. If you destroy at the outset of disease you have arrested the disease, but if you let it go on & pass into the blood, the iron ~~iron~~ is useless except as a disinfectant. Use it when the throat is covered with small white spots-points.

Croupous inflammation or diphtheria. This may originate *ab initio*. Period of incubation depends upon number of bacteria in blood. Few - Period long. Many - Period short. Bacteria take up the nutritious material of the body & reproduce themselves. When the false membrane is formed it may pass into the septicæmic form. That form is simply the addition of septicæmia to diphtheria. It is produced by the reabsorption of the products of decomposition in the throat. There is marked decomposition going on in the throat. These are phenomena not due to the presence of diphtheria that properly belong to septicæmia & it is a question of blood poisoning. A case may begin as the catarrhal form, pass through into the croupous form & then the gangrenous form will appear. In consequence of the inflammation dipping down into the sub-mucous tissue, infiltration takes place. The products of infiltration garble the blood vessels, then the tissues supplied above must become necrosed & that is gangrene. You may have gangrene in a few days. Recovery almost impossible. Great sloughs occur. I have seen the internal carotid garroted. Not rare when diphtheria is epidemic. Cure throat, cure disease.

Other Phenomena Partial Paralysis (2-3 weeks after recovery) of muscles or group of muscles of Pharynx, arm, shoulders, or hemiplegia. Always atrophic form. Muscles atrophied. Lymphatic glands under Sterno-mastoid enlarged. Tumefaction about throat. Cloudy swelling of tissues & organs resulting in Albuminuria.

Inflammatory processes in posterior root-zones of spinal cord probably due to cloudy swelling. There are little inflamed pointed spots. Paralysis follows. Treat as other Paralysis, Massage, Galvanic Current, Strychnine. Use of muscles &c. Diagnosis easy. False membrane in throat - not always in larynx. (It is in croup.) Not very high temperature.

Treatment. Support patient. Local treatment -

Rx Potassii Chloratis gr XX
Tincturae ferri chloridi ℥ ii
Aquaes ℥ iv M

Lip protarg made of sponge or rag in the above & wash throat out every 2 hours. Don't give water for 15 or 20 minutes after cleaning throat. Give ℥ss to ℥ of same mixture in sweet water every 2 hours. Solution of Corrosive Sublimat

1 to 2000. Inject in nostrils every 3 hours. Day & night.

Rx Hydrargyri chloridi corrosivi gr i
Ammonii chloridi ℥ ii
Tincturae ferri chloridi ℥ vi
Aquaes q.s. ad ℥ v M

Give ℥i in a little water every 3 hours. Day & night. Reduce temperature with quinine & antipyrine. Bromides Milk &c. Constant inhalations of vapor of slaked lime or atomized lime water in the throat (Continue day & night.) Or lactic acid (next to steam of lime) to dissolve false membrane. Tinct. of Iron to build up the system qtt V - I. every 4 6 hours. Flowers of Sulphur blown into fauces. When false membrane passes through nostrils, the products of poisonous conditions corrode upper lip & poison creeps in by discharge from nostril. Inject Corrosive sublimat solution. If pulse falls - danger. Give brandy whiskey. Carbonate of ammonia gr V - X. Look out for heart failure - Nutrients. Rarely attacks children under 2 years generally 2 to 10 years. Specifics. Germicides. Sulphite & sulpho-carbolate of soda. Gargle with above. Chlorate of Potash wash every 2 hours or so. In croupous septicæmia - gangrenous. - Support patient - Nutrients Alcohol. Membrane separates by virtue of layer of pus beneath. Vapor of water or lime. Blow sulphur in the throat; Iron & Quinia in tonic doses.

Rheumatism, Constitutional infection. Germ. Not. Uric or lactic acids in blood. Hereditary predisposition. Prussian families. — Acute Articular Rheumatism, Larger joints affected. Prodromata, Headache, anorexia, thirst, malaise. Chill (not marked) or series. Fever Temperature, 102° – 106° . One joint sore. Furred tongue. Vagrant tendency — joint to joint or uniformity of attacks from joint on one side to corresponding joint on other. Heat, redness, pain, swelling. In some cases joints swelled enormously. Infiltration of subcutaneous cellular tissue. That causes the pain & swelling. Temperature runs a uniform course though little reduction of temperature in the morning. Metastasis — goes over entire body in some cases Patient is utterly helpless. Other phenomena, Profuse perspiration (sour smelling with some) Pain severe. There is an excessive acid condition of all the secretions, even saliva. Obscure diseases of spinal cord or hysteria may cause trouble with joints. Be on guard unless a case of rheumatic fever (Dr Mitchell said that when there was spinal affection metastasis would decide)

Treatment Salicylic acid, (Pericardial disorders stomach) Salicylate of soda. (Change urine from acid to alkali.) gr X–XX every 2 hours. Opium Always first control pain in every disease. Wrap up joints in cotton batting. Take linen & cotton off bed & put on blankets. Bromides or + Chloral gr X each. When stomach won't bear the salicylates give Potassium Nitrate.

℞ Acidī salicylicī ʒii
Potassii acetatis ʒv
Glycerinae ʒi
Aquae ʒiv
℞. Sig. ʒi every 2, 3 or 4 hours.

℞ Acidī salicylicī
Potassii bicarbonatis aa ʒv
Aquae ʒii
℞. dim. adde.
Tincturae nucis vomicae
Spiritus lavandulae comp. aa ʒii
Aquae q.s. ad ʒiv
℞. Sig. ʒi every 2 hours
Largely diluted.

In some hospitals only Peppermint water is used.

Self limited 15-20 days. Danger of endocarditis & pericarditis.
Examine heart at every visit. May be irritable & hurried also.
If ulcerated (malignant) endocarditis - Dyspnoea, rapid action
pain over heart. - Cough hacking. Blister over heart.

Fly blister. 4 to 6 hours. Acetate of Potash for Rheumatism
Add gr XV to Wine of Colchicum every 3 or 4 hours.

Three types of people who have rheumatism (Old persons & children rare)
1. Young man, anaemic, good student. loose in structure - Indigestion - Doesn't sleep well. Salicyl of Soda first then give Iron.
2. Full blood, plethoric, robust, muscular, careful as to habits. Saline cathartics.
3. Loose, flabby, obese, lager beer drinker - Alcoholic stimulants. Nutrients.

Gastro-intestinal canal

Diarrhoea. Thin watery evacuation. One such is a diarrhoea
It is a question of quality not quantity. Associated with other diseases not as a symptom but as a disease. Diarrhoea means a disease of the intestinal canal. - is an expression of a hyperaemic condition of canal. Causes. Unripe fruit - heat - indigestion. Look for cause. Bacteria found as irritating cause. Many thin watery evacuations - no pain. Few - tenesmus & twist - Pain.

If watery evacuations - no pain. give astringents

If tenesmus twist &c give opium.

Rx Misturae chalk	3+
Tincturae opi	3ii
Tincturae cinnamomi.	3ss.
Aquae q.s. ad	3ii

M. Sig. Teaspoonful after each discharge.

Guard-diet. Acetate of lead gr i Pulv opium gr ss. (Caution)
In atonic diarrhoea Bismuth sub carb. or sub nit. gr V-XXX
Bismuth & Morphine. Tincture of Opium or Bismuth gr XV-XX. Soda bicarb. gr V-X. Pepsin gr V-X.

If diarrhoea is chronic use astringents & opiates. If the effect of heat & there is prostration give stimulants in addition.

Tincture of Camphor & Tincture of opium. Fowlers Solution gr. IV to VI ter die, in water for Chronic Diarrhoea.

Children in summer - acute. Aromatic syrup of Thubarb
 grt X-XX. Or chalk + aromatic + opium. Put
 patient in bed on back,

Constipation 1. Lack of fluid in the intestinal canal
 - Drink water. Enema at bed time. Cufful to be retained
 all night. 2. Suspended Peristaltic action. Nervous
 system involved. There should be vermicular motion all
 the time both waking & sleeping. If suspended, constipation
 results. Restore peristaltic action.

℞ Extracti colocynthidis compositi gr XX
 Extracti hyoscyami gr XV
 Extracti aloes gr X
 Extracti nucis vomicae gr V
 Extracti ipecacuanhae
 Resinae Podophyllis aa gr i

M et ft massa in capsulas No XII div.

Sig. One night & morning.

℞ Extracti aloes ʒ ss.
 Extracti hyoscyami gr XX
 Extracti belladonnae gr V
 Extracti nucis vomicae gr VI

M et ft massa in capsulas No XX div.

Sig. One night & morning.

℞ Extracti cascarae sagradae fl. ʒ ii
 Tincturae belladonnae
 Tincturae nucis vomicae aa ʒ ii

M et ft solutio. Sig teaspoonful ter die.
 after meals in wineglassfull of water.

Use also an enema, a large quantity of very warm
 water at the time of evacuation. Exercise of any kind.
 Food, fruits, prunes, apples. Stewed prunes in a decoction
 of senna. Knead abdomen. When there is faecal
 accumulation - can't give cathartic. At night, suppository
 containing Extract of stramonium gr ʒ/8 Belladonna
 gr ʒ/4. ^{Cacao Butter gr XV-XX} In morning give injection. Use beef & eggs
 Milk & lime water &c. Little bread.

Cholera Morbus. Signs. Diarrhoea - Nausea causing exhaustion - Pain - Vomiting - bilious; rapid pulse; thirst. Anatomical lesion. Hyperaemia of mucous membrane of stomach & intestines. Nervous system also involved. Get warm then exposed to draught. Overfulness of vessels of cord. Dejecta contain bile. In Asiatic Cholera dejecta are like rice water. Treatment Hypodermic injection Morphine gr $\frac{1}{4}$ & Atropine gr $\frac{1}{100}$, Mustard Plaster over stomach. Don't give water. Small pieces of ice. Lime water or Soda bicarb. \mathcal{Z} in water. Repeat. After giving Morphine & Atropine twice then give Calomel gr $\frac{1}{10}$ Morphine gr $\frac{1}{20}$ & a little sugar. Drop it on tongue. Repeat every $\frac{1}{2}$ hour till nausea is controlled. Mustard to calves of legs & feet. Pain antagonizes the effect of opiates.

Dysentery Inflammation of mucous membrane of large intestine. There is no clue to the pathological condition from the word. Sometimes epidemic, generally sporadic. Sometimes in winter, generally in summer. It is associated in the fall with miasmatic fevers. Signs 2 to 3 days of prodromata as in all fevers. Chill, sharp, especially if there is malaria - headache - anorexia - diarrhoea thin, watery, bloody; - malaise. The laity make two divisions 1 Gray flux. 2. Bloody flux. In gray flux there is much mucus, thin mucus pus, serum also. Tenesmus ~~also~~ marked. Chill, seldom marked reaction. Temperature not over 102° . Skin not hot. After a few days, dysentery. Mucous membrane of large intestine inflamed. Sometimes even in epidemics the inflammation is only catarrhal. In another case sporadic. The inflammation is croupous. Then the dejections present masses of false membrane & true casts of lining. If the croupous form is epidemic, there will be few cases of the catarrhal form & vice versa. The croupous is the most severe, the inflammation most intense, the ^{sub} mucous tissue also involved. Ulceration sometimes extends to the muscular coat & perforation occurs. Rare. The dejecta are pathognomonic. In the sporadic form, little treatment is required. In some dejecta all blood. Treatment Saline cathartics

to be repeated if necessary. Pulv. Ipecac. gr XX - XXX every 3-6 hours. Bismuth gr XV - XXX + Opium gr i - iii every 2-4 hours. Rectal suppository.

℞ Extracti belladonnae gr ii
Extracti opii gr vi
Olei theobromae ʒ ii

M. Div in suppositoria No vi.

Sig. One after each movement.

Injection of hot water 108° at least, as high as possible. Inject slowly & as much as possible. Repeat as soon as it passes away. It may stay an hour.

Proctitis. Inflammation of rectum. Use opium whatever else you use. Cover abdomen with flaxseed or mush poultice. Warm adjuvants: Slippery elm tea. Gum arabic. Flaxseed tea. (ʒi to Aqua ʒi).

Erysipelas Erysipelatous fever. Epidemic. Signs. Prodroma, few days. Bilious attack sometimes ushers it in. Chill - Fever 104° - 106° . The temperature determines the gravity of the case. When epidemic it is contagious. Forty years ago in the Mississippi Valley a deadly disease called Erysipelas. The laity called it "Black Tongue". The mucous lining of fauces & pharynx is involved. Sometimes typhoid state ensues. In "Black Tongue" it is generally on the face too. It tends to occur with puerperal peritonitis. It is a germ disease. Watch lying in cases. Inflammation first on face on side of nose or lip. Inflammation. Superficial (generally). Phlegmonous. Superficial, yet subcutaneous tissues become infiltrated, face destroyed. Can't recognize patient - swelling so great. Signs Quick pulse, anorexia, headache, fever (sometimes typhoid state). - Grave. Inflammation of meninges of brain, arachnoid & pia. Rare (dangerous) If inflammation passes into scalp, it passes over entire scalp & spreads by continuity. The eruption may occur on any part of the body but generally on the face & is called Facial Erysipelas. Bubbles may exist & coalesce, especially in phlegmonous form. Suspect erysipelas in acute eruption which you can't readily locate.

Prodromata several days. Spots on skin darker than in scarlet fever. Involvement of sub mucous tissue. Acute phenomena. Asthenic type of fever; chill, sharp reaction; nothing pathognomonic. Indication of broken down constitution. Treatment Antipyretics especially quinine Tinct. Ferri chloridum gtt. XII-XXX every 3 or 4 hours. Saline cathartics at the outset. Local. Outside of inflammation faint with Tinct. Iodine or Nitrate of Silver gr XX - I. to Aqua 3i. Cranberry Poultice. Cut off hair (if on scalp) & apply solution of Acetate of lead, saturated & to every 3v add 3i Tinct. Opium. Apply on cloth to head. Carbolic acid (in advance of inflammation) hypodermatically 50% solution.

Dyspepsia. Acute. Indigestion, sick headache, Treatment. Eat nothing. Overcome constipation, give tone to nervous system & stomach. Tincture Nux Vomica. gtt VII - X after each meal, given for weeks. Pepsin & c.

Lacte peptine better. Morphine $\frac{1}{36}$ - $\frac{1}{12}$

R Lacto peptine	3ss.	R Zinc phosphidi	gr III
Sodii bicarb.	3ii	Extract nucis vomicae	gr X
Aquae menthae pip.	3iv	M. div Capsulas	No XX
M. Sig 3i after meals.		Sig. One immediately after each meal.	

Fruit of the Paw Paw

R Paw Paw gr XX
Lacto saccharati 3i
M. div in Pulv. No VII
Sig. One powder $\frac{1}{2}$ hour after eating in connection with Sodii bicarb. gr XV

Acidi carbonici
Glycerina aa M VIII

Spirits ammonii aromatic. gtt X-XX in Aqua 3i-ii. Fowlers solution gtt III-iv after eating. For 6 weeks. Change of environment. If nausea &c. Hydrocyanic acid gtt iv before eating. Tincture of Iron. Nux vomica. Strychnine. Morphine. Oxalate of Cerium $\frac{1}{2}$ & Codeia. gr ss. Just before meals.

To prevent fermentation, Sulphite or hyposulphite of Soda gr. V - XV. Immediately after meals. Salicin. If regurgitation Creasote gtt iii - V in wine, or Syrup of Acacia after meals. Carbolie acid. Bismuth, if followed by pain. For constipation & malaria

℞ Quininae sulphatis	gr XXXii
Hydrargyri Chloridi mitis	gr VIII
Strychninae sulphatis	gr i
Misce et fiat Pulvis in charta no XXXii div.	

℞. One after each meal.

Parotitis. Mumps. Contagious. Found mostly in children; oftener in males. Age under 20 years. Metastasis to testes - causing orchitis then atrophy. Period of incubation 10-18 days. Symptoms: Head, back & bone ache; furred tongue, chill or series of rigors. Stiff jaws. Temperature rarely above 100. Inflammation of one or both parotid glands. The glands become enlarged. There is inflammation of the interstitial connective tissue. Gland doughy or hard. Ducts involved. Maximum 1-2 days. then decrease. In 4-7 days the attack has passed off. Testes. Inflammation, pain, permanent atrophy. - Sometimes suppuration (rare) Always few migrated leucocytes. Diagnosis easy, can't mistake. Open mouth, can't talk or eat well, maybe. Sporadic: Prognosis favorable. Treat orchitis - suspensory bandage. Paint with equal parts water & fluid extract of belladonna. Keep hips elevated. Treatment for Mumps. Saline cathartic, warm room. Tie face in warm flannel to prevent metastasis. Stimulant liniment; avoid cold. Diaphoretics. Chloral, Bromides.

164.

25 Blank Leaves Not Scanned

